8.7 Measurements Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in Annex C, sub-clause C.3.1. This measurement channel is used both in active cell and cells to be measured.
- Physical channels used as defined in Annex E.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.
- Note: For the UE which supports both Band III and Band IX operating frequencies, the measurement performance requirements for Band III shall apply to the multi-band UE.

8.7.1 CPICH RSCP

- 8.7.1.1 Intra frequency measurements accuracy
- 8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the actual CPICH RSCP power from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

CPICH_RSCP1 $|_{dBm} \ge -114 \text{ dBm}$ for Bands I, IV, VI, X, XI, XIX and XXI,

 $CPICH_RSCP1|_{dBm} \ge -113 dBm$ for Band IX,

CPICH_RSCP1|_{dBm}≥ -112 dBm for Bands II, V and VII,

 $CPICH_RSCP1|_{dBm} \ge -111 dBm$ for Band III, VIII, XII, XIII, XIV, XX and XXII.

CPICH_RSCP1 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI (NOTE 1).

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.1.1.1.1: CPICH_RSCP Intra frequency absolute accuracy

		Accuracy [dB]			Conditions					
Parameter	Unit	Normal condition	Extreme condition	Band I, IV, VI, X, XI, XIX and XXI	Band IX Band II, V a VII		Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII		
				lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3,84 MHz]	lo [dBm/3.84 MHz]		
CPICH_RSC P	dBm	± 6	± 9	-9470	-9370	-9270	-90.570 (Note 1)	-9170		

	dBm	± 8	± 11	-7050	-7050	-7050	-7050	-7050
NOTE 1: The o	conditior	n is -9270 dl	3m/3.84 MHzwl	hen the carrier free	quency of the ass	signed UTRA char	nnel is within 869	-894 MH z for
the	UE whice	ch supports bot	h Band V and B	and XXVI operatir	ng frequencies.			

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.1 and A.9.1.1.2.

8.7.1.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits in clause 8.7.1.1.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.1.4	Method of test
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8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: CPICH RSCP Intra frequency parameters

Der	motor	l Init	Test 1		Test 2		Test 3		
Para	ameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Chan	nel number		Chan	nel 1	Chan	nel 1	Channel 1		
CPICH_Ec/lor		dB	-10		-10		-10		
PCCPCH_Ec/lo	r	dB	-1	2	-12		-12		
SCH_Ec/lor		dB	-12		-1	2	-1	2	
PICH_Ec/lor		dB	-1	5	-1	5	-1	5	
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94	
	Band I, IV, VI, X, XI, XIX, XXI						-97	.47	
loc	Band IX*		-77.54		-59.98		-96.47		
	Band II, V, VII Band XXV, XXVI	dBm/3.84 MHz					-95.47 -93.97 (Note 2)		
	Band III, VIII, XII, XIII, XIV.XX, XXII						-94.47		
Ïor/loc		dB	4	0	9	0	0	-6.53	
CPICH RSCP, Note 1	Band I, IV, VI, X, XI, XIX, XXI Band IX* Band II, V, VII Band XXV, XXVI Band III, VIII, XII, XIII, XIV,XX,	dBm	-83.5	-87.5	-60.98	-69.88	-107.47 -106.47 -105.47 -103.97 (Note 2) -104.47	-114.0 -113.0 -112.0 -110.5 (Note 2) -111.0	
	XXII Band I, IV, VI, X,						-g)4	
	Band IX*	dBm/ 3.84 MHz dBm dBm dBm/3.84 MHz					-9	03	
lo, Note 1	Band II, V, VII Band XXV, XXVI Band III, VIII, XII	dBm/3.84 MHz	-7	-71		-50		-92 -90.5 (Note 2)	
	XIII, XIV,XX, XXII						-91		
Propagation cor	ndition	-	AW	GN	AW	GN	AW	GN	

NOTE 1: CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.
 *) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance requirements for Band III shall apply to the multi-band UE.
 NOTE 2: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.
 Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.1.1.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- SS shall check CPICH_RSCP value in MEASUREMENT REPORT messages. CPICH RSCP power of Cell 1 and Cell 2 reported by UE is compared to actual CPICH RSCP power for each MEASUREMENT REPORT message.
- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 6) The RF parameters are set up according to table 8.7.1.1.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) The RF parameters are set up according to table 8.7.1.1.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 8) The SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL r	message for Intra freq	uency measurement (Step 2):
-----------------------	------------------------	---------------------	--------	----

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	leftmost hit of the hit string contains the most
	cignificant bit of the MAC I
PPC mossage sequence number	Significant bit of the MAC-1.
-KKC message sequence number	internal counter
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present

Information Element	Value/Remark
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	
indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	FALSE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.1.5 Test requirements

Table 8.7.1.1.1.3: CPICH_RSCP Intra frequency absolute accuracy, test requirement

		Accuracy [dB]			Conditions					
		Extreme lo [dBn		lo [dBm/3	3.84 MHz]					
Parameter	Unit	Normal condition	condition	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII		
CPICH_RSCP	dBm	±7.4	±10.4	-9470	-9370	-9270	-90.570 (Note 1)	-9170		
	dBm	±9.4	±12.4	-7050	-7050	-7050	-7050	-7050		
NOTE 1: The condition is -9270 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.										

Table	871	114.	CPICH	RSCP	Intra	frea	uency	v te st	naramete	ers
Iable	0.7.1		CFICIT	NOUL	mua	neq	uency	ງເຮວເ	paramen	213

Pa	amotor	Linit	Tes	Test 1		Test 2		st 3	
Fai	ameter	Onit	Cell 1 Cell 2		Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Cha	nnel number		Chan	nel 1	Chan	nel 1	Channel 1		
CPICH_Ec/lor		dB	-1	0	-1	0	-1	0	
PCCPCH_Ec/I	or	dB	-1	2	-1	-12		-12	
SCH_Ec/lor		dB	-1	2	-1	2	-1	2	
PICH_Ec/lor		dB	-1	5	-1	5	-1	-15	
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11 -0.94		
loc	Band I, IV, VI, X, XI, XIX, XXI	dBm/3.84 MHz	-79	.16	-61,6		-96.47		

Parameter		Unit	Test 1		Test 2		Test 3		
Faid	ameter	Offic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
	Band IX*						-95	.47	
	Band II, V, VII						-94	.47	
	Band XXV, XXVI						-92.97 (Note 2)		
	Band III, VIII, XII,								
	XIII, XIV,XX,						-93	.47	
	XXII								
lor/loc	-	dB	4.3	0.3	9.3	0.3	0.3	-6.23	
	Band I, IV, VI, X,						-106 17	-1127	
	XI, XIX, XXI						100.17	112.1	
	Band IX*						-105.17	-111.7	
CPICH RSCP, Note 1	Band II, V, VII						-104.17	-110.7	
	Band XXV XXVI	dBm	-84.86	-88.86	-62.3	-71.3	-102.67	-109.2	
	Balla you, your						(Note 2)	(Note 2)	
	Band III, VIII, XII,								
	XIII, XIV,XX,						-103.17	-109.7	
	XXII								
	Band I, IV, VI, X,						-92	-92.8	
	XI, XIX, XXI						02,0		
	Band IX*						-91.8		
lo. Note 1	Band II, V, VII	dBm / 3.84 MHz	-72	2.4	-51.4		-90).8	
-,	Band XXV, XXVI				_	01,1		Note 2)	
	Band III, VIII, XII,								
	XIII, XIV,XX,						-89	9.8	
Durantian			A) A /		A) A /		A) A /		
Propagation cor	naition	-	AVV		AVV	GN	AVV		
NOTE 1: CPIC	HRSCP and IO IEV	eis nave been caicula	ited from o	ther param	eters for i	ntormation	purposes.	Iney	
*) Eorth	not settable paramet	te both Band III and F	Rand IX on	orating fro	auanciae f	ho moscu	romont		
) FOTu		ts for Band III shall a	partu in up	multi-band	uenues,i III⊏	ine measu	Tement		
NOTE 2. The t	ast narameter is mo	dified by -1 5 dB whe	on the carri	or froquen	cv of the a	ssianod I I	TRA chann	ol is	
within	n 869-894 MHz for t	he LIF which support	s hoth Ban	d V and Ba	and XXVI o	neratina fi	requencies		
Tests shall be d	lone sequentially. Te	est 1 shall be done fire	st. After tes	st 1 has be	en execut	ed test par	ameters fo	r tests 2	
and 3 shall be s	et within 5 seconds	so that UE does not I	oose the C	cell 2 in bet	ween the	tests.			

The reported values for the absolute intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.1.5.

Table 8.7.1.1.1.5: CPICH_RSCP Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3 (Band I, IV, VI, X, XI XIX, XXI)	Test 3 (Band IX)	Test 3 (Band II,V and VII)	Test 3 (Band III, VIII, XII, XIII, XIV, XX and XXII)					
	Normal Conditions										
Lowest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 1)	_23	_44	_2	_3	_4	_5					
Highest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 1)	_38	_63	_17	_18	_19	_20					
Lowest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 2)	_19	_35	-5 (NOTE 2)	-4 (NOTE 2)	-3 (NOTE 2)	2 (NOTE 2)					
Highest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 2)	_34	_54	_10	_11	_12	_13					
		Ext	reme Conditions								
Lowest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 1)	_20	_41	-1 (NOTE 2)	_0	_1	_2					
Highest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 1)	_41	_66	_20	_21	_22	_23					
Lowest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					
value (Cell 2)	_16	_32	-5 (NOTE 2)	-5 (NOTE 2)	-5 (NOTE 2)	-5 (NOTE 2)					
Highest reported	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP	CPICH_RSCP					

Release 11			918	3GPI	P TS 34.121-1 V1	1.1.1 (2013-10)
value (Cell 2)	_37	_57	_13	_14	_15	_16

3GPP TS 34.121-1 V11.1.1 (2013-10)

- NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.
- NOTE 2: This value applies for a UE complying to release 5 or later. The corresponding value for a pre-release 5 UE is CPICH RSCP 0.
- 8.7.1.1.2 Relative accuracy requirement
- 8.7.1.1.2.1 Definition and applicability

The relative accuracy of CPICH RSCP is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.1.2.2 **Minimum Requirements**

The accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

CPICH_RSCP1,2|_{dBm}≥ -114 dBm for Bands I, IV, VI, X, XI XIX and XXI

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2|_{dBm}≥ -112 dBm for Bands II, V, VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2|_{dBm} \geq -110.5 dBm for Band XXV and XXVI (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 dB$$

$$\frac{I_o}{\left(\hat{I}_{or}\right)_{in\ dB}} - \left(\frac{CPICH_E_c}{I_{or}}\right)_{in\ dB} \le 20dB$$

Table 8.7.1.1.2.1: CPICH_RSCP Intra frequency relative accuracy

		Accura	cy [dB]			Condi	tions	
Parameter	Unit	Normal	Extreme	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II,V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII
		condition	condition	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3,84 MHz]	lo [dBm/3.84 MHz]
CPICH_RSC P	dBm	± 3	± 3	-9450	-9350	-9250	-90.550 (Note 1)	-9150
NOTE 1: The condition is -90.550 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.								

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.1.2 and A.9.1.1.2.

8.7.1.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.1.2.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.1.1.2.3.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 5) The result of step 4) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 6) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 7) The RF parameters are set up according to table 8.7.1.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4), 5) and 6) above are repeated.
- 8) The RF parameters are set up according to table 8.7.1.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4), 5) and 6) above are repeated.
- 9) The SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.1.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.1.2.5 Test requirements

Table 8.7.1.1.2.2: CPICH_RSCP Intra frequency relative accuracy, test requirements

		Accura	cy [dB]			Condi	tions	
						lo [dBm/3	.84 MHz]	
Parameter	Unit	Normal	Extreme	Band I, IV, VI,	Band IX	Band II, V and	Band XXV and	Band III, VIII,
		condition	condition	X, XI, XIX and XXI		VII	XXVI	XII, XIII, XIV, XX and XXII
CPICH_RSC P	dBm	±3.8	±3.8	-9450	-9350	-9250	-90.550 (Note 1)	-9150
NOTE 1: The condition is -90.550 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.								

Demonster		l lucit	Test 1		Test 2		Test 3		
Para	ameter	Unit	Cell 1	Cell 1 Cell 2		Cell 1 Cell 2		Cell 1 Cell 2	
UTRA RF Channel number			Chan	nel 1	Channel 1		Channel 1		
CPICH_Ec/lor		dB	-1	0	-10		-10		
PCCPCH_Ec/lo	r	dB	-1	2	-1	2	-12		
SCH_Ec/lor		dB	-1	2	-1	2	-1	2	
PICH_Ec/lor		dB	-1	5	-1	5	-1	5	
DPCH_Ec/lor		dB	-15	-	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-1.11	-0.94	
Band I, IV, VI, X, XI, XIX, XXI							-96.47		
loc	Band II, V, VII Band XXV, XXVI	dBm/3.84 MHz	-74.54		-61,6		-94.47 -92.97 (Note 2)		
	Band III, VIII, XII, XIII, XIV,XX, XXII						-93.47		
Îor/loc		dB	4.3	0.3	9.3	0.3	0.3	-6.23	
CPICH RSCP.	Band I, IV, VI, X, XI, XIX, XXI Band IX* Band II, V, VII	_					-106.17 -105.17 -104.17	-112.7 -111.7 -110.7	
Note 1	Band XXV, XXVI	dBm	-80.2	-84.2	-62.3	-/1.3	-102.67 (Note 2)	-109.2 (Note 2)	
	XIII, XIV,XX, XXII						-103.17	-109.7	
	Band I, IV, VI, X, XI, XIX, XXI Band IX*		-67.8		-51,4		-92 -91	2,8 1.8	
lo, Note 1	Band II, V, VII Band XXV, XXVI	dBm/3.84 MHz					-90 -89.3 (I).8 Note 2)	
	XIII, XIV,XX, XIII, XIV,XX, XXII						-89.8		
Propagation cor	-	AW	GN	AW	GN	AW	GN		
NOTE 1: CPIC	HRSCP and lo leve	els have been calcula	ated from o	ther param	eters for i	nformation	purposes.	They	
 are not settable parameters themselves. *) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance requirements for Band III shall apply to the multi-band UE. NOTE 2 The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within 260, 204 MHz for the UE who autoparts both Band V(and Band XV)(I operating frequencies). 									
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.									

Table 8.7.1.1.2.3: CPICH RSCP Intra	frequency test parameters
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The reported values for the relative intra frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.1.2.4.

Table 8.7.1.1.2.4: CPICH	_RSCP Intra frequency	relative accuracy requirements
	for the reported va	lues

	Test 1	Test 2	Test 3			
	Normal Cor	nditions				
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)			
Highest reported value cell 2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)			
	Extreme Co	nditions				
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 13)	CPICH_RSCP_(x - 11)			
Highest reported value cell2	CPICH_RSCP_x	CPICH_RSCP_(x - 5)	CPICH_RSCP_(x - 3)			
CPICH_RSCP_x is the reported value of cell 1						

- NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.
- 8.7.1.2 Inter frequency measurement accuracy
- 8.7.1.2.1 Relative accuracy requirement
- 8.7.1.2.1.1 Definition and applicability

The relative accuracy of CPICH RSCP in inter frequency case is defined as the CPICH RSCP measured from one cell compared to the CPICH RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.1.2.1.2 Minimum Requirements

The accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

CPICH_RSCP1,2|_{dBm}≥ -114 dBm for Bands I, IV, VI X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113$ dBm for Band IX,

CPICH_RSCP1,2|_{dBm}≥ -112 dBm for Bands II, V and VII,

CPICH_RSCP1,2 $|_{dBm} \ge -111 \text{ dBm}$ for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$

 $| Channel 1_Io|_{dBm'3.84 MHz} - Channel 2_Io|_{dBm'3.84 MHz} | \le 20 dB.$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.1.2.1.1: CPICH_RSCP Inter frequency relative accuracy

		Accura	Accuracy [dB]		Conditions			
Parameter	Unit	Normal	Extreme	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII
		condition	condition	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3,84 MHz]	lo [dBm/3.84 MHz]
CPICH_RSC P	dBm	± 6	± 6	-9450	-9350	-9250	-90.550 (Note 1)	-9150
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for								
the	the UE which supports both Band V and Band XXVI operating frequencies.							

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.1.2.1 and A.9.1.1.2.

8.7.1.2.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP relative measurement accuracy is within the specified limits in clause 8.7.1.2.1.2. This measurement is for handover evaluation, DL open loop power control, UL open loop control and for the calculation of pathloss.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies.

For UEs that require compressed mode, compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256".

For UEs that do not require compressed mode, compressed mode is not applied and therefore no Physical Channel Reconfiguration message will be sent.

CPICH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: CPICH RSCP Inter frequency parameters

Parameter		Linit	Test 1		Test 2		
		Unit	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Chanr	nel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lor		dB	-1	0	-1	0	
PCCPCH_Ec/lor	r	dB	-1	2	-1	2	
SCH_Ec/lor		dB	-1	2	-1	2	
PICH_Ec/lor		dB	-1	15	-1	5	
DPCH_Ec/lor		dB	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	
	Band I, IV, VI, X, XX, XIX, XXI				-84.00	-94.46	
	Band IX*				-83.00	-93.46	
loc	Band II, V, VII	dBm/ 3.84	-60.00	-60.00	-82.00	-92.46	
	Band XXV, XXVI	MHz	-00.00		-80.5 (Note 2)	-90.96 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-81.00	-91.46	
Ïor/loc		dB	9.54	9.54	0	-9.54	
	Band I, IV, VI, X, XI, XIX, XXI	- dBm	-60.46		-94.0	-114.0	
	Band IX*				-93.0	-113.0	
CPICH RSCP,	Band II, V, VII			60.46	-92.0	-112.0	
Note 1	Band XXV, XXVI			00.40	-90.5 (Note 2)	-110.5 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-91.0	-111.0	
	Band I, IV, VI, X, XI, XIX, XXI				-81.0	-94.0	
	Band IX*				-80.0	-93.0	
lo Noto 1	Band II, V, VII	dBm/3.84	50.00	50.00	-79.0	-92.0	
	Band XXV/ XXV/	MHz	-30.00	-50.00	-77.5	-90.5	
					(Note 2)	(Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-78.0	-91.0	
Propagation condition		-	AW	AWGN		AWGN	
NOTE 1: CPICI are no	HRSCP and lo levels ot settable parameters	have been calc themselves.	culated from othe	er parameters fo	r information pu	irposes. They	
*) For th	e UF which supports	both Band III an	d Band IX operation	ating frequencies	s the measuren	nent	

performance requirements for Band III shall apply to the multi-band UE.

NOTE 2: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.1.2.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.4.
- 2) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message. Otherwise, go to step 4.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message for intra frequency measurement and transmit MEASUREMENT CONTROL message for inter frequency measurement.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check CPICH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. CPICH RSCP power value measured from Cell 1 is compared to CPICH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of CPICH RSCP of Cell 1 and Cell 2.
- 8) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 9) The RF parameters are set up according to table 8.7.1.2.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6), 7) and 8) above are repeated.
- 10) The SS shall transmit RRC CONNECTION RELEASE message.
- 11) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 1):

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IE. The first/	
	leftmost bit of the bit string contains the most	
	significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	

Information Flomant	Value/Bernert	Varalan
	value/Remark	version
Uplink radio resources		
-Maximum allowed ULIX power	Not Present	
- CHOICE channel requirement	Not Present	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	R99 and
		Rel-4 only
-Downlink information common for all radio links		,
-Downlink DPCH info common for all RI	Not Present	
-CHOICE mode	FDD	
DBCH compressed mode info		
- mansmission gap pattern sequence		
	1	
- IGPS Status Flag	Activate	
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256	
-Transmission gap pattern sequence configuration		
parameters		
-TGMP	FDD measurement	
-TGPRC	Infinity	
-TGSN	4	
-TGL1	7	
-TGI 2	Not Present	
TGD		
-TGPI 1	3	
	S Not Present	P00 and
-101 L2	Not resent	Rol 4 only
	Mada O	Rel-4 Only
	Mode U	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	В	
-DeltaSIR1	3.0	
-DeltaSIRafter1	3.0	
-DeltaSIR2	Not Present	
-DeltaSIRafter2	Not Present	
-N Identify abort	Not Present	
-T Reconfirm abort	Not Present	
-TX Diversity Mode	Not Present	
-SSDT information	Not Present	R99 and
		Rel-4 only
-Default DPCH Offset Value	Not Present	i tor i only
-Downlink information per radio link list		
-Downlink information for each radio link		
-Choice mode	FDD	
-Primary CPICH Into	100	
-Primary scrambing code		
-PDSCH with SHO DCH Into	Not Present	R99 and
		Rel-4 only
-PDSCH code mapping	Not Present	R99 and
		Rel-4 only
-Downlink DPCH info for each RL		
-CHOICE mode	FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used	
-DPCH frame offset	Set to value Default DPCH Offset Value (as	
	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No code change	
TPC combination index		
	U Not Procent	DO0 ord
	INUL FIESEIIL	Ray and
	Not Propert	Rei-4 Only
	INUL Present	
-SUUPCH Information for FACH	INOT Present	

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-CHOICE mode	
- Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cens	
-Cell synchronisation information reporting	IRUE
	TRUE
-CPICH Ec/NO reporting indicator	
-CPICH RSCP reporting indicator	
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	FALSE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRACarrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non-used frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.1.2.1.5 Test requirements

Table 8.7.1.2.1.3: CPICH RSCP Inter frequency relative accuracy, test requirements

		Accuracy [dB]			Conditions					
					lo [dBm/3.84 MHz]					
Parameter	Unit	Normal	Extreme	Band I, IV, VI	Band IX	Band II, V and	Band XXV and	Band III, VIII,		
		condition	condition	X, XI, XIX and		VII	XXVI	XII, XIII, XIV,		
				XXI				XX and XXII		
	dBm	⊥7 1	⊥7 1	-9450	-9350	-9250	-90.550	-9150		
		±7.1	±7.1				(Note 1)			
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for										
the UE	the UE which supports both Band V and Band XXVI operating frequencies.									

Table 8.7.1.2.1.4: CPICH RSCP Inter frequency tests parameters

Parameter		l lmit	Tes	st 1	Test 2		
Pa	rameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Chan	nel number		Channel 1	Channel 2	Channel 1	Channel 2	
CPICH_Ec/lor		dB	-1	0	-	10	
PCCPCH_Ec/lo	r	dB	-1	2	-12		
SCH_Ec/lor		dB	-1	2	-	12	
PICH_Ec/lor		dB	-1	5	-	15	
DPCH_Ec/lor		dB	-15	-	-15	-	
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	
	Band I, IV, VI, X,XI, XIX, XXI				-83.00	-93.46	
loc	Band IX*				-82.00	-92.46	
	Band II, V, VII	dBm/ 3.84	-61.6	-61.6	-81.00	-91.46	
	Band XXV, XXVI	MHz	-01.0	-01.0	-79.50 (Note 2)	-89.96 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-80.00	-90.46	
Ïor/loc	·	dB	9.84	9.84	0.3	-9.24	
	Band I, IV, VI, X, XI, XIX, XXI		-61.8	-61.8	-92.7	-112.7	
	Band IX*				-91.7	-111.7	
CPICH RSCP,	Band II, V, VII	dBm			-90.7	-110.7	
Note 1	Band XXV, XXVI	dBiii			-89.2 (Note 2)	-109.2 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-89.7	-109.7	
	Band I, IV, VI, X, XI, XIX, XXI				-79.8	-93.0	
	Band IX*				-78.8	-92.0	
lo Noto 1	Band II, V, VII	dBm/3.84	51.2	51.2	-77.8	-91.0	
	Band XXV, XXVI	MHz	-51.5	-51.5	-76.3 (Note 2)	-89.5 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-76.8	-90.0	
Propagation cor	ndition	-	AW	GN	AWGN		
NOTE 1: CPIC are n	HRSCP and lo levels ot settable parameters	have been calc themselves.	culated from othe	er parameters fo	r information pu	rposes. They	

For the UE which supports both Band III and Band IX operating frequencies, the measurement *)

performance requirements for Band III shall apply to the multi-band UE. The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is NOTE 2: within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for test 2 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

The reported values for the relative inter frequency CPICH RSCP measurement shall meet the requirements in table 8.7.1.2.1.5.

Table 8.7.1.2.1.5: CPICH_RSCP Inter frequency relative accuracy requirements for the reported values

	Test 1	Test 2				
Normal Conditions						
Lowest reported value cell 2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)				
Highest reported value cell 2	CPICH_RSCP_(x+8)	CPICH_RSCP_(x - 12)				
Extreme Conditions						
Lowest reported value cell2	CPICH_RSCP_(x - 8)	CPICH_RSCP_(x - 28)				
Highest reported value cell2	CPICH_RSCP_(x + 8)	CPICH_RSCP_(x - 12)				
CPICH_RSCP_x is the reported value of cell 1						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH Ec/lo

- 8.7.2.1 Intra frequency measurements accuracy
- 8.7.2.1.1 Absolute accuracy requirement
- 8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the actual CPICH_Ec/Io power ratio from same cell.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

CPICH_RSCP1 $|_{dBm} \ge -114 \text{ dBm}$ for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1|_{dBm}≥ -112 dBm for Bands II, V and VII,

 $CPICH_RSCP1|_{dBm} \ge -111 \text{ dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,}$

CPICH_RSCP1 $|_{dBm} \ge -110.5 \text{ dBm}$ for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.2.1.1.1: CPICH_Ec/lo Intra frequency absolute accuracy, minimum requirements

		Accuracy [dB]			Conditions			
Parameter	Unit	Normal condition	Extreme condition	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII
				lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz]
CPICH_Ec/lo	dB	$\begin{array}{c} \pm 1.5 \text{ for } \text{-}14 \leq \text{CPICH} \\ \text{Ec/lo} \\ \pm 2 \text{ for } \text{-}16 \leq \text{CPICH} \\ \text{Ec/lo} < \text{-}14 \\ \pm 3 \text{ for } \text{-}20 \leq \text{CPICH} \\ \text{Ec/lo} < \text{-}16 \end{array}$	± 3	-9450	-9350	-9250	-90.550 (Note 1)	-9150
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.								

The normative reference for this requirement is TS 25.133 [2] clause 9.1.2.1.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io absolute measurement accuracy is within the specified limits in clause 8.7.2.1.1.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. CPICH Ec/Io intra frequency absolute accuracy requirements are tested by using the test parameters in table 8.7.2.1.1.2.

Devemeter		l lucit	Tes	st 1	Tes	Test 2		Test 3	
Para	ameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Chan	nel number		Chan	nel 1	Chan	nel 1	Chan	nel 1	
CPICH_Ec/lor		dB	-1	0	-10		-10		
PCCPCH_Ec/lo	r	dB	-1	2	-1	2	-1	2	
SCH_Ec/lor		dB	-1	2	-1	2	-1	2	
PICH_Ec/lor		dB	-1	5	-1	5	-1	5	
DPCH_Ec/lor		dB	-15	-	-15	-	-6 -		
OCNS_Ec/lor		dB	-1.11	-0.94	-1.11	-0.94	-2.56	-0.94	
	Band I, IV, VI, X, XI, XIX, XXI				-89	.07	-94.98		
	Band IX*				-88	.07	-93	.98	
loc	Band II, V, VII	dBm/3.84 MHz	-56	98	-87	.07	-92	.98	
100	Band XXV, XXVI		-50	.50	-85	.57	-91.48 (Note 2)	
	Band III, VIII, XII,				-86.07				
	XIII, XIV,XX,						-91	.98	
	XXII								
lor/loc	or/loc		3.0	3.0	-2.9	-2.9	-9.0	-9.0	
CPICH Ec/lo, N	ote 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0	
lo, Note 1	Band I, IV, VI, X, XI, XIX, XXI				-86		-9	4	
	Band IX*				-85		-93		
	Band II, V, VII	dBm/3.84 MHz	-5	50		-84		2	
	Band XXV, XXVI		-50		-82.5		-90.5 (Note 2)		
	Band III, VIII, XII,								
	XIII, XIV,XX,				-8	3	-9	1	
	XXII								
Propagation cor	ndition	-	AW	GN	AW	GN	AW	GN	
NOTE 1: CPIC	H Ec/lo and lo level	is have been calculat	ed from ot	her parame	eters for in	tormation p	ourposes.	l hey are	
not s	ettable parameters t	themselves.	- LIV						
^) ⊢ortr	ne UE which suppor	ts both Band III and E	Band IX op	erating fre	quencies,	ine measu	rement		
perio	mance requiremen	ts for Band III shall a	oply to the	multi-band	JUE.	'		-11-	
NOTE 2: The t	n 869-894 MHz for th	aitied by -1.5 dB whe	en the carr s both Ban	ler frequen d V and Ba	and XXVI o	ssigned U perating fr	requencies	iei is	
Tests shall be d	one sequentially. Te	st 1 shall be done fire	st After tea	st 1 has he		ad test par	ameters fo	r tests 2	
and 3 shall he s	et within 5 seconds	so that UF does not I	oose the (Cell 2 in he	tween the	tests		1 10010 2	
and 3 shall be set within 5 seconds so that OE does not loose the Cell 2 in between the tests.									

Table 8.7.2.1.1.2: CPICH_Ec/lo Intra frequency parameters

8.7.2.1.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.5.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_Ec/No value in MEA SUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1, which is compared to the actual CPICH Ec/Io power ratio from the same cell for each MEASUREMENT REPORT message.
- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 6) The RF parameters are set up according to table 8.7.2.1.1.5 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) The RF parameters are set up according to table 8.7.2.1.1.5 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 8) The SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Measured quantity value	Unit
CPICH Ec/lo < -24	dB
-24 ≤ CPICH Ec/lo < -23.5	dB
-23.5 ≤ CPICH Ec/lo < -23	dB
-1 ≤ CPICH Ec/lo < -0.5	dB
-0.5 ≤ CPICH Ec/lo < 0	dB
0 ≤ CPICH Ec/lo	dB
	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	0
- Measurement quantity	
-Intra-frequency reporting quantity	
-Cell synchronisation information reporting	TRUE
indicator	INGE
	TRUE
	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	FALSE
indicator	
-Cell Identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present

Information Element	Value/Remark
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.1.5 Test requirements

The CPICH Ec/Io measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2. The effect of assumed thermal noise and noise generated in the receiver (-99 dBm for Band I, IV, VI, X, XI, XIX and XXI, -98dBm for Band IX, -97 dBm for Band II, V and VII, -96 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII, -95.5 for Band XXV and XXVI) shall be added into the required accuracy defined in subclause 8.7.2.1.1.2 as shown in table 8.7.2.1.1.4.

Table 8.7.2.1.1.4: CPICH_Ec/lo Intra frequency absolute accuracy, test requirements

		Accuracy [dB]		Conditions					
					lo [dBm/3.84 MHz]				
Parameter	Unit	Normal condition	Extreme condition	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II,V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV and XX	
CPICH_Ec/ lo	dB	$\begin{array}{l} -3.11.9 \ \mbox{for -14} \leq \mbox{CPICH} \\ Ec/lo \\ -3.62.4 \ \mbox{for -16} \leq \mbox{CPICH} \\ Ec/lo < -14 \\ -4.63.4 \ \mbox{for -20} \leq \mbox{CPICH} \\ Ec/lo < -16 \end{array}$	-4.63.4	-9487	-9386	-9285	-90.583.5 (Note 1)	-9184	
		$\begin{array}{c} \pm 1.95 \mbox{ for } -14 \leq \mbox{CPICH} \\ Ec/lo \\ \pm 2.4 \mbox{ for } -16 \leq \mbox{CPICH Ec/lo} \\ < -14 \\ \pm 3.4 \mbox{ for } -20 \leq \mbox{CPICH Ec/lo} \\ < -16 \end{array}$	± 3.4	-8750	-8650	-8550	-83.550 (Note 1)	-8450	
NOTE 1: The for	NOTE 1: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies								

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Parameter		L Incid	Test 1		Test 2		Test 3			
Pa	arameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2		
UTRA RF Cha	nnel number		Chan	nel 1	Chan	nel 1	Chan	nel 1		
CPICH_Ec/lor		dB	-9.	.7	-9.8 -9.		.9			
PCCPCH_Ec/I	or	dB	-11	.7	-11.8		-11.9			
SCH_Ec/lor		dB	-11	.7	-11	.8	-11	.9		
PICH_Ec/lor		dB	-14	.7	-14	1.8	-14	.9		
DPCH_Ec/lor		dB	-14.7	-	-14.8	-	-5.9	-		
OCNS_Ec/lor		dB	-1.2	-1.02	-1.17	-0.99	-2.64	-0.97		
	Band I, IV, VI, X, XI, XIX, XXI				-89	.07	-93	.98		
	Band IX*				-88.07		-92	.98		
loc	Band II, V, VII	dBm/3.84 MHz	-58	-58.5		-87.07		-91.98		
	Band XXV, XXVI				-85.57 (Note 2)		-90.48 (Note 2)			
	Band III, VIII, XII,				-86.07		-00.08			
	XIII, XIV,XX, XXII				-00	.07	-30	.30		
Îor/loc		dB	3.3	3.3	-2.6	-2.6	-8.7 -8.7			
CPICH Ec/lo, N	Note 1	dBm	-13.6	-13.6	-15.6	-15.6	-19.6 -19.6			
	Band I, IV, VI, X, XI, XIX, XXI				-85.85		-92	2.9		
	Band IX*				-84	.85	-91	.9		
lo, Note 1	Band II, V, VII	dBm / 3.84 MHz	-51	.3	-83	.85	-90).9		
	Band XXV, XXVI				-82.35 (Note 2)	-89.4 (1	Vote 2)		
	Band III, VIII, XII, XIII, XIV,XX, XXII				-82.85		-89.9			
Propagation co	ondition	-	AW	GN	AW	GN	AW	GN		
NOTE 1: CPI	CH Ec/lo and lo levels	have been calculated	from othe	er paramete	ers for info	rmation pu	rposes.Th	ey are		
not	settable parameters th	emselves.								
*) For	the UE which supports	both Band III and Ba	nd IX oper	ating frequ	encies, the	emeasure	ment perfo	mance		
requ	requirements for Band III shall apply to the multi-band UE.									
NOTE 2: The	test parameter is mod	lified by -1.5 dB when	the carrie	rfrequency	of the ass	igned UTF	RAchanne	l is within		
869	-894 MHz for the UE w	hich supports both Ba	and V and	Band XXV	l operating	frequenci	es.			
Tests shall be	done sequentially. Tes	t 1 shall be done first.	After test	1 has beer	n executed	l test parar	neters for t	ests 2		
and 3 shall be	set within 5 seconds s	and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

Table 8.7.2.1.1.5: CPICH	_Ec/lo Intra	frequency	tests parameters
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The reported values for the absolute intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.1.6.

Table 8.7.2.1.1.6: CPICH_Ec/lo Intra frequency absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3						
Normal Conditions									
Lowest reported value	CPICH_Ec/No_17	CPICH_Ec/No_12	CPICH_Ec/No_0						
Highest reported value	CPICH_Ec/No_25	CPICH_Ec/No_22	CPICH_Ec/No_16						
Extreme Conditions									
Lowest reported value	CPICH_Ec/No_14	CPICH_Ec/No_10	CPICH_Ec/No_0						
Highest reported value	CPICH_Ec/No_28	CPICH_Ec/No_24	CPICH_Ec/No_16						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1.2 Relative accuracy requirement

8.7.2.1.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

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8.7.2.1.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.2.1 are valid under the following conditions:

CPICH_RSCP1,2|_{dBm}≥ -114 dBm for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2 $|_{dBm} \ge -112$ dBm for Bands II, V and VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 dB$$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

		Accuracy [dB]			Conditions					
Parameter	Unit	Normal condition	Extreme condition	Band I, IV, VI, X, XI XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII		
				lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84		
				MHz]	MHz]	MHz]	MHz]	MHz]		
The lower of the CPICH_Ec/lo from cell1 and cell2	dB	$\begin{array}{l} \pm 1.5 \text{ for } \textbf{-14} \leq \text{CPICH} \\ \text{Ec/lo} \\ \pm 2 \text{ for } \textbf{-16} \leq \text{CPICH} \\ \text{Ec/lo} < \textbf{-14} \\ \pm 3 \text{ for } \textbf{-20} \leq \text{CPICH} \end{array}$	± 3	-9450	-9350	-9250	-90.550 (Note 1)	-9150		
		Ec/lo < -16								
NOTE 1: The condit for the UF	OTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies									

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.1.2 and A.9.1.2.2.

8.7.2.1.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.1.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.1.2.4 Method of test

8.7.2.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are in the same frequency. CPICH Ec/Io intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

8.7.2.1.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.2.1.2.3.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- 4) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio value measured from Cell 1 is compared to CPICH_Ec/Io power ratio value measured from Cell 2 for each MEASUREMENT REPORT message.
- 5) The result of step 4) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 6) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 7) The RF parameters are set up according to table 8.7.2.1.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4), 5) and 6) above are repeated.
- 8) The RF parameters are set up according to table 8.7.2.1.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4), 5) and 6) above are repeated.
- 9) The SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement in clause 8.7.2.1.1.4.2 is used.

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.1.2.5 Test requirements

Table 8.7.2.1.2.2: CPICH_Ec/lo Intra frequency relative accuracy

		Accuracy [dB]				Cond	Conditions		
_					lo [dBm / 3.84 MHz]				
Parameter	Unit	Normal condition	Extreme condition	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV and XX	
CPICH_Ec/lo	dB	$\begin{array}{l} \pm 2.3 \text{ for } -14 \leq \text{CPICH} \\ \text{Ec/lo} \\ \pm 2.8 \text{ for } -16 \leq \text{CPICH} \\ \text{Ec/lo} < -14 \\ \pm 3.8 \text{ for } -20 \leq \text{CPICH} \\ \text{Ec/lo} < -16 \end{array}$	±3.8	-9450	-9350	-9250	-90.550 (Note 1)	-9150	
NOTE 1: The c the U	onditior E which	n is -9250 dBm/3.84 n supports both Band V	MHz when the and Band XX	e carrier frequen VI operating freq	cy of the assignue of the series of the seri	ned UTRA chan	nel is within 86	9-894 MHz for	

			Tes	t 1	Test 2		Test 3	
	Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRARF	Channel number		Chan	nel 1	Chan	nel 1	el 1 Channel 1	
CPICH_E	c/lor	dB	-9	.7	-9	.8	-9	.9
P	CCPCH_Ec/lor	dB	-11	-11.7		-11.8		.9
SCH_Ec/lor		dB	-11	-11.7		-11.8		.9
PICH_Ec/lor		dB	-14	-14.7		-14.8		1.9
DPCH_Ec	/lor	dB	-14.7	-	-14.8	-	-5.9	-
OCNS_Ec	/lor	dB	-1.2	- 1.02	-1.17	-0.99	-2.64	-0.97
	Band I, IV, VI, X, XI, XIX, XXI				-89	.07	-93	.98
	Band IX*				-88.07		-92.98	
loc	Band II, V, VII	dBm/3.84 MHz	-58.5		-87.07		-91.98	
	Band XXV, XXVI				-85.57		-90.48 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-86.07		-90.98	
Ĩor/loc		dB	3.3	3.3	-2.6	-2.6	-8.7	-8.7
CPICH Ec/lo, Note 1		dBm	-13.6	-13.6	-15.6	-15.6	-19.6	-19.6
Band I, IV, VI, X, XI, XIX, XXI					-85.85		-92	2.9
	Band IX*		/ 3.84 MHz -51,3		-84.85		-91	.9
lo, Note 1	Band II, V, VII	dBm / 3.84 MHz			-83.85		-90.9	
,	Band XXV, XXVI				-82.35		-89.4 (Note 2)	
	Band III, VIII, XII, XIII, XIV,XX, XXII				-82.85		-89).9
Propagatio	on condition	-	AW	GN	AW	GN	AW	GN
NOTE 1:	CPICH Ec/lo and lo leve	Is have been calculat	ed from ot	ner param	eters for in	formation	ourposes.	They are
	not settable parameters	themselves.						
*)	For the UE which support	rts both Band III and E	Band IX op	erating fre	quencies, t	he measu	rement	
	performance requiremen	ts for Band III shall a	pply to the	multi-band	UE.			
NOTE 2:	The test parameter is mo	odified by -1.5 dB whe	en the carr	er frequen	cy of the a	ssigned U	TRAchann	iel is
	within 869-894 MHz for the	he UE which support	s both Ban	d V and Ba	and XXVI o	perating fi	requencies	•
Tests shal	l be done sequentially. Te	est 1 shall be done fin	st. After tes	st 1 has be	en execute	ed test par	ameters fo	r tests 2
land 3 shal	I be set within 5 seconds	so that UE does not	loose the C	cell 2 in be	tween the t	tests.		

Fable 8.7.2.1.2.3: CPICH	_Ec/lo Intra	frequency	tests parameters
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The reported values for the relative intra frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.1.2.4.

	Test 1	Test 2	Test 3					
Normal Conditions								
Lowest reported value cell 2	CPICH_Ec/No_(x - 5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 8)					
Highest reported value cell 2	CPICH_Ec/No_(x+ 5)	$CPICH_Ec/No_(x+6)$	CPICH_Ec/No_(x+ 8)					
Extreme Conditions								
_owest reported value cell2 CPICH_Ec/No_(x - 8) CPICH_Ec/No_(x - 8) CPICH_Ec/No_(x - 8)								
Highest reported value cell2	CPICH_Ec/No_(x + 8)	CPICH_Ec/No_(x+ 8)	CPICH_Ec/No_(x+ 8)					
CPICH_Ec/No_x is the reported value of cell 1								

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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8.7.2.2	Inter frequency measurement accuracy

8.7.2.2.1 Absolute accuracy requirement

Void

- 8.7.2.2.2 Relative accuracy requirement
- 8.7.2.2.2.1 Definition and applicability

The relative accuracy of CPICH Ec/Io in the inter frequency case is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.2.2.2.2 Minimum Requirements

The accuracy requirements in table 8.7.2.2.2.1 are valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114$ dBm for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2 $|_{dBm} \ge -112 \text{ dBm}$ for Bands II, V and VII,

 $CPICH_RSCP1,2|_{dBm} \ge -111 \text{ dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,$

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$

| Channel 1_Io $|_{dBm/3.84 \text{ MHz}}$ -Channel 2_Io $|_{dBm/3.84 \text{ MHz}}| \le 20 \text{ dB}.$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.2.2.2.1: CPICH_Ec/lo Inter frequency relative accuracy, minimum requirements

		Accuracy [dl	3]	Conditions				
Parameter	Unit	Normal condition	Extreme condition	Band I, IV, VI, X, XI XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII
				lo [dBm/3.84 MHz]	lo [dBm/3.84 MHz1	lo [dBm/3.84 MHz1	lo [dBm/3.84 MHz1	lo [dBm/3.84 MHz1
The lower of the CPICH_Ec/lo from cell1 and cell2	dB	$\begin{array}{l} \pm \ 1.5 \ \text{for} \ -14 \leq \text{CPICH} \\ & \text{Ec/lo} \\ \pm \ 2 \ \text{for} \ -16 \leq \text{CPICH} \\ & \text{Ec/lo} < -14 \\ \pm \ 3 \ \text{for} \ -20 \leq \text{CPICH} \\ & \text{Ec/lo} < -16 \end{array}$	± 3	-9450	-9350	-9250	-90.550 (Note 1)	-9150
NOTE 1: The condit for the UE	IOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.							

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.2.2.2 and A.9.1.2.2.

8.7.2.2.2.3 Test purpose

The purpose of this test is to verify that the CPICH Ec/Io relative measurement accuracy is within the specified limits in clause 8.7.2.2.2. This measurement is for Cell selection/re-selection and for handover evaluation.

8.7.2.2.2.4 Me	ethod	of	test
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8.7.2.2.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies.

For UEs that require compressed mode, compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256".

For UEs that do not require compressed mode, compressed mode is not applied and therefore no Physical Channel Reconfiguration message will be sent.

CPICH Ec/Io inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.2.2.2.2.

Table 8.7.2.2.2.2: CPICH Ec/lo Inter frequency parameters

Parameter UTRA RF Channel number		Unit	Tes	st 1	Test 2		Test 3	
		Onic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
			Channel	Channel	Channel	Channel	Channel	Channel
			1	2	1	2	1	2
CPICH_I	Ec/lor	dB	-1	0	-1	0	-1	0
PCCPCH	1_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec	/lor	dB	-1	2	-1	2	-1	2
PICH_EC	c/lor	dB	-1	5	-1	5	-1	5
DPCH_E	Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_E	Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I, IV, VI, X, XI, XIX, XXI				-87.27	-87.27	-94.46	-94.46
	Band IX*				-86.27	-86.27	-93.46	-93.46
loc	Band II, V, VII	dBm/ 3.84	-52.22	-52.22	-85.27	-85.27	-92.46	-92.46
100	Band XXV, XXVI	MHz	-52.22	-52.22	83.77	83.77	90.96	90.96
	Band III, VIII, XII, XII, XIV,XX, XXII	_			-84.27	-84.27	-91.46	-91.46
Ĩor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH E	c/lo, Note 1	dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I, IV, VI, X, XI, XIX, XXI				-86	-86	-94	-94
	Band IX*			-50	-85	-85	-93	-93
lo, Note	Band II, V, VII	dBm/3.84	-50		-84	-84	-92	-92
1	Band XXV, XXVI	MHz	00	00	82.4	82.4	90.5	90.5
	Band III, VIII, XII, XIII, XIV,XX, XXII	-			-83	-83	-91	-91
Propaga	tion condition	-	AW	GN	AW	GN	AW	GN
NOTE 1:	CPICH Ec/lo and lo levels h	ave been calc	ulated from	other paran	neters for in	formation p	urposes.Th	ey are not
	settable parameters themselves.							
*)	*) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance							
	requirements for Band III shall apply to the multi-band UE.							
NOTE 2:	The test parameter is modifi	ed by -1.5 dB	when the ca	arrier freque	ency of the a	ssigned UT	RAchanne	l is within
Tooto ob	oby-oy4 IVIHZ for the UE Whi	ich supports D	oun Band V	toot 1 hook	A VI operati	ng requent	motors for t	toctc 2
and 3 ch	all be set within 5 seconds so	that UE door	tillocath	n Coll 2 in h		tooto		C315 Z
anu 5 511	and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.							

8.7.2.2.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.2.2.2.4.
- 2) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message. Otherwise, go to step 4.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit a MEASUREMENT CONTROL message for intra frequency measurement and transmit another MEASUREMENT CONTROL message for inter frequency measurement.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check CPICH_Ec/No value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. According to table 8.7.2.1.1.3 the SS calculates CPICH_Ec/Io power ratio of Cell 1 and Cell 2. CPICH_Ec/Io power ratio measured from Cell 1 is compared to CPICH_Ec/Io power value measured from Cell 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of CPICH_Ec/Io of Cell 1 and Cell 2.
- 8) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 9) The RF parameters are set up according to table 8.7.2.2.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6), 7) and 8) above are repeated.
- 10) The RF parameters are set up according to table 8.7.2.2.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6), 7) and 8) above are repeated.
- 11) The SS shall transmit RRC CONNECTION RELEASE message.

12) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	

Information Element	Value/Remark	Version
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	Not Present	
- CHOICE channel requirement	Not Present	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	R99 and Rel-4
		only
-Downlink information common for all radio links		
-Downlink DPCH info common for all RL	Not Present	
-CHOICE mode	FDD	
-DPCH compressed mode info		
-Transmission gap pattern sequence		
- IGPS Status Flag		
- IGCFN	(Current CFN + (256 – 11/10msec))mod 256	
- Iransmission gap pattern sequence		
	rDD medsurement	
	111111ty 1	
	7	
	/ Not Present	
-TGD		
-TGPI 1	3	
-TGPL2	Not Present	R99 and Rel-4
		only
-RPP	Mode 0	only
-ITP	Mode 0	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	В	
-DeltaSIR1	3.0	
-DeltaSIRafter1	3.0	
-DeltaSIR2	Not Present	
-DeltaSIRafter2	Not Present	
-N Identify abort	Not Present	
-T Reconfirm abort	Not Present	
- I X Diversity Mode	Not Present	
-SSD1 information	Not Present	R99 and Rel-4
	Net Present	only
-Delault DPCH Oliset value	Not Present	
-Downlink information for each radio link list		
Choice mode		
-Choice mode		
-Primary scrambling code	100	
-PDSCH with SHO DCH Info	Not Present	R99 and Rel-4
		only
-PDSCH code mapping	Not Present	R99 and Rel-4
		only
-Downlink DPCH info for each RL		0
-CHOICE mode	FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used	
-DPCH frame offset	Set to value Default DPCH Offset Value (as	
	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No code change	
-TPC combination index	0	

Information Element	Value/Remark	Version
-SSDT Cell Identity	Not Present	R99 and Rel-4
		only
 Closed loop timing adjustment mode 	Not Present	
-SCCPCH Information for FACH	Not Present	

First MEASUREMENT CONTROL message for Intra frequency measurement (Step 4):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
, , , , , , , , , , , , , , , , , , ,	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	
-Intra-frequency cell info list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	IRUE
Indicator	TRUE
-CHOICE III00e	
-CPICH EC/NO reporting indicator	
-CPICH RSCP reporting indicator	
-Pathioss reporting indicator Reporting quantities for monitored set colls	FALSE
-Cell synchronisation information reporting	
indicator	TALSE
	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TBUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

Second MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IF. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IF from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setun
-Measurement Reporting Mode	ootap
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	i chouldu roporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	Not resent
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	
-CHOICE mode	EDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non-used
·	frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.2.2.2.5 Test requirements

The effect of assumed thermal noise and noise generated in the receiver -99 dBm for Band I, IV, VI, X, XI, XIX and XXI, -98dBm for Band IX, -97 dBm for Band II, V and VII, -96 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII, -95.5 dBm for Band XXV and XXVI) shall be added into the required accuracy defined in clause 8.7.2.2.2.2 as shown in table 8.7.2.2.2.3.

Table 8.7.2.2.3: CPICH	_Ec/lo Inter frequency	relative accuracy,	test requirements
------------------------	------------------------	--------------------	-------------------

Parameter	Unit	Normal condition	Extreme		lo [dBm/3.84 MHz]				
			condition	Band I, IV, VI, X, XI XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII	
CPICH_Ec/lo	dB	$\begin{array}{c} \pm 3.5 \text{ for -14} \leq \text{CPICH Ec/lo} \\ \pm 4 \text{ for -16} \leq \text{CPICH Ec/lo} < - \\ 14 \\ \pm 5 \text{ for -20} \leq \text{CPICH Ec/lo} < - \\ 16 \end{array}$	± 5	-9487	-9386	-9285	-90.584.5 (Note 1)	^{34.5} 1) -9184	
	uв	$\begin{array}{l} \pm 2.3 \text{ for -14} \leq \text{CPICH Ec/lo} \\ \pm 2.8 \text{ for -16} \leq \text{CPICH Ec/lo} \\ < -14 \\ \pm 3.8 \text{ for -20} \leq \text{CPICH Ec/lo} \\ < -16 \end{array}$	± 3.8	-8750	-8650	-8550	-83.550 (Note 1) -8	-8450	
NOTE 1: The 1 MH z	NOTE 1: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.								

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.2.2.

Table 8.7.2.2.2.4: CPICH Ec/lo Inter frequency tests parameters

Parameter		Unit	Tes	st 1	Test 2		Test 3	
		Onic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
			Channel	Channel	Channel	Channel	Channel	Channel
UINAN	Channel Humber		1	2	1	2	1	2
CPICH_I	Ec/lor	dB	-1	0	-1	0	-1	0
PCCPCH	H_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec	/lor	dB	-1	2	-1	2	-1	2
PICH_EC	c/lor	dB	-1	5	-1	5	-1	5
DPCH_E	c/lor	dB	-15	-	-6	-	-6	-
OCNS_E	c/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I, IV, VI, X, XI, XIX, XXI				-86.27	-86.27	-93.46	-93.46
	Band IX*				-85.27	-85.27	-92.46	-92.46
loc	Band II, V, VII	dBm/ 3.84	-53 5	-53 5	-84.27	-84.27	-91.46	-91.46
100	Band XXV/ XXV/	MHz	-82.77 -	-82.77	-89.96	-89.96		
							(Note 2)	(Note 2)
	Band III, VIII, XII, XIII, XIV,XX, XXII				-83.27	-83.27	-90.46	-90.46
Ïor/loc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH E	c/lo, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
	Band I, IV, VI, X, XI, XIX, XXI				-84.9	-84.9	-93	-93
	Band IX*				-83.9	-83.9	-92	-92
lo, Note	Band II, V, VII	dBm /3.84	-51 15	-51 15	-82.9	-82.9	-91	-91
1	Band XXV, XXVI	MHz	-01.10	-01.10	-81.4	-81.4	-89.5 (Note 2)	-89.5 (Note 2)
	Band III, VIII, XII, XIII, XIV,XX, XXII	-			-81.9	-81.9	-90	-90
Propagat	tion condition	-	AW	GN	AW	GN	AW	GN
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.								
*)	For the UE which supports both Band III and Band IX operating frequencies, the measu rement performance						ormance	
,	requirements for Band III shall apply to the multi-band UE.							
NOTE 2:	NOTE 2: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within						l is within	
	869-894 MHz for the UE white	ch supports b	oth Band V	and Band X	XVI operati	ng frequenc	cies.	
Tests sha	all be done sequentially. Test 1	shall be done	e finst. After	test 1 has b	been execut	ed test para	meters for t	tests 2
and 3 sh	and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.							

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

The reported values for the relative inter frequency CPICH Ec/Io measurement shall meet the requirements in table 8.7.2.2.2.5.

	Test 1	Test 2	Test 3				
Normal Conditions							
Lowest reported value cell 2	CPICH_Ec/No_(x -5)	CPICH_Ec/No_(x - 6)	CPICH_Ec/No_(x - 10)				
Highest reported value cell 2	CPICH_Ec/No_(x+5)	CPICH_Ec/No_(x+6)	CPICH_Ec/No_(x+10)				
	Extreme Co	nditions					
Lowest reported value cell2 CPICH_Ec/No_(x - 8) CPICH_Ec/No_(x - 8) CPICH_Ec/No_(x - 1)							
Highest reported value cell2 CPICH_Ec/No_(x + 8) CPICH_Ec/No_(x + 8) CPICH_Ec/No_(x + 1)							
CPICH_Ec/No_x is the reported value of cell 1							

8.7.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

8.7.3.1 Absolute measurement accuracy requirement

8.7.3.1.1 Definition and applicability

The absolute accuracy of UTRA Carrier RSSI is defined as the UTRA Carrier RSSI measured from one frequency compared to the actual UTRA Carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.3.1.2 Minimum Requirements

Table 8.7.3.1.1: UTRA Carrier RSSI Inter frequency absolute accuracy

		Accura	cy [dB]		Conditions				
				Band I, IV, VI,	Band IX	Band II, V and	Band XXV	Band III, VIII,	
Darameter	Unit	Normal	Extromo	X, XI, XIX, and		VII	and XXVI	XII, XIII, XIV,	
Farameter	Onic	condition	condition	XXI				XX and XXII	
		condition	condition	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	
				MHz]	MHz]	MHz]	MHz]	MHz]	
	dBm	+ 4	± 7	-9470	-9370	-9270	-90.570	-9170	
RSSI		<u> </u>	± /				(Note 1)		
	dBm	± 6	± 9	-7050	-7050	-7050	-7050	-7050	
NOTE 1: The c	NOTE 1: The condition is -9270 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz								
for the UE which	supports	both Band V a	nd Band XXV	1 operating frequ	encies.				

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.1.

8.7.3.1.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.1.4 Method of test

8.7.3.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies.

For UEs that require compressed mode, compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256".

For UEs that do not require compressed mode, compressed mode is not applied and therefore no Physical Channel Reconfiguration message will be sent.

UTRA Carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.2.

Parameter		Unit	Test 1		Test 2		Test 3	
			Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
			Channel	Channel	Channel	Channel	Channel 1	Channel 2
			1	2	1	2	Charmer	Charmer 2
CPICH_Ec/lor		dB	-10		-10		-10	
PCCPC	H_Ec/lor	dB	-12		-12		-12	
SCH_Ec/lor		dB	-12		-12		-12	
PICH_Ec/lor		dB	-15		-15		-15	
DPCH_	Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_	Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I, IV, VI, X, XI, XIX, XXI	-					-94.46	-94.46
	Band IX*						-93.46	-93.46
	Band II, V, VII	dBm/ 3.84	52.22	52.22	70.27	70.27	-92.46	-92.46
	Band XXV/ XXV/	MHz	-32.22	-32.22	-70.27	-70.27	-90.96	-90.96
	Dand XXV, XXVI						(Note 2)	(Note 2)
	Band III, VIII, XII, XIII, XIV.XX. XXII						-91.46	-91.46
lor/loc		dB	-1.75	-1.75	-4.7	-4.7	-9.54	-9.54
CPICH Ec/lo. Note 1		dBm	-14.0	-14.0	-16.0	-16.0	-20.0	-20.0
	Band I, IV, VI, X, XI,	dBm/3.84 MHz	-50	-50	-69	-69	-94	-94
	Band IX*						-93	-93
lo	Band II. V. VII						-92	-92
Note 1							-90.5	-90.5
NOLE I	Band XXV, XXVI						(Note 2)	(Note 2)
	Band III, VIII, XII, XIII,							
	XIV,XX, XXII						-91	-91
Propagation condition		-	AWGN		AWGN		AWGN	
NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not								
settable parameters themselves.								
*) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance								
requirements for Band III shall apply to the multi-band UE.								
NOTE 2: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within								
869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.								
Tests shall be done sequentially Test 1 shall be done first. After test 1 has been executed test parameters for tests 2								

Table 8.7.3.1.2: UTRA Carrier RSSI Inter frequency absolute accuracy parameters

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.3.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.3.1.2.
- 2) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message. Otherwise, go to step 4.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA Carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.
- 7) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.

- 8) The RF parameters are set up according to table 8.7.3.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 9) The RF parameters are set up according to table 8.7.3.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 10) The SS shall transmit RRC CONNECTION RELEASE message.
- 11) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message	
	and writes to this IE. The first/leftmost bit of the bit	
	string contains the most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its internal	
ů i	counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Liplink radio resources		
-Maximum allowed UL TX power	Not Present	
- CHOICE channel requirement	Not Present	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	R99 and Rel-4
		only
-Downlink information common for all radio links		only
-Downlink DPCH info common for all RI	Not Present	
-CHOICE mode		
-DPCH compressed mode info		
-Transmission gap pattern sequence		
-TGPSI	1	
-TGPS Status Flag	Activate	
-TGCEN	(Current CEN + (256 - TTI/10msec)) mod 256	
-Transmission gap pattern sequence		
configuration parameters		
-TGMP	EDD measurement	
TGPRC	Infinity	
TGSN	4	
-TGL1	7	
-TGL2	Not Present	
TGD	UNDEFINED	
-TGPI 1	3	
	l ^v	1

Information Element	Value/Remark	Version
-TGPL2	Not Present	R99 and Rel-4
		only
-RPP	Mode 0	-
-ITP	Mode 0	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	В	
-DeltaSIR1	3.0	
-DeltaSIRafter1	3.0	
-DeltaSIR2	Not Present	
-DeltaSIRafter2	Not Present	
-N Identify abort	Not Present	
-T Reconfirm abort	Not Present	
-TX Diversity Mode	Not Present	
-SSDT information	Not Present	R99 and Rel-4
		only
-Default DPCH Offset Value	Not Present	,
-Downlink information per radio link list		
-Downlink information for each radio link		
-Choice mode	FDD	
-Primary CPICH info		
-Primary scrambling code	100	
-PDSCH with SHO DCH Info	Not Present	R99 and Rel-4
		only
-PDSCH code mapping	Not Present	R99 and Rel-4
		only
-Downlink DPCH info for each RL		-
-CHOICE mode	FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used	
-DPCH frame offset	Set to value Default DPCH Offset Value (as	
	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No code change	
-TPC combination index	0	
-SSDT Cell Identity	Not Present	R99 and Rel-4
-		only
 Closed loop timing adjustment mode 	Not Present	
-SCCPCH Information for FACH	Not Present	

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement

Information Element	Value/Remark
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included.
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTR A Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non-used
	frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.1.5 Test requirements

The UTRA Carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.3.1.2. The effect of assumed thermal noise and noise generated in the receiver (-99 dBm for Band I, IV, VI, X, XI, XIX and XXI, -98dBm for Band IX, -97 dBm for Band II, V and VII, -96 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII, -95.5 dBm for Band XXV and XXVI) shall be added into the required accuracy defined in subclause 8.7.3.1.2 as shown in table 8.7.3.1.3.

Table 8.7.3.1.3: UTRA Carrier RSSI absolute accuracy, test requirements

	Unit	Accuracy [dB]						
Parameter		Normal condition			Extreme condition			
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3	
UTRA Carrier RSSI	dBm	± 7.15	± 5.1	-55.8	± 10.15	± 8.1	-88.8	
The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

	Deremeter	l Init	Tes	st 1	Tes	st 2	Tes	t 3
	Farameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
	E Channel number		Channel	Channel	Channel	Channel	Channel 1	Channel 2
UINAN	F Charliner Humber		1	2	1	2		Channel 2
CPICH_	Ec/lor	dB	-1	0	-1	0	-10	
PCCPC	H_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_E	c/lor	dB	-1	2	-1	2	-1	2
PICH_E	c/lor	dB	-1	5	-1	5	-1	5
DPCH_	Ec/lor	dB	-15	-	-6	-	-6	-
OCNS_	Ec/lor	dB	-1.11	-0.94	-2.56	-0.94	-2.56	-0.94
	Band I, IV, VI, X, XI,						-93.46	-93.46
	Band IX*	-					-92.46 -91.46 -89.96	-92 46
	Band II. V. VII	dBm/3.84					-91.46	-91.46
loc		MHz	-53.5	-53.5	-69.27	-69.27	-89.96	-89.96
	Band XXV, XXVI						(Note 2)	(Note 2)
	Band III, VIII, XII, XIII,						-90.46	-90.46
-	XIV,XX, XXII						50.40	50.40
lor/loc		dB	-1.45	-1.45	-4.4	-4.4	-9.24	-9.24
CPICH I	Ec/lo, Note 1	dBm	-13.8	-13.8	-15.7	-15.7	-19.7	-19.7
	Band I, IV, VI, X, XI, XIX, XXI						-93	-93
	Band IX*	-					-92	-92
lo,	Band II, V, VII	dBm/3.84	54.45	54.45	07.0		-91	-91
Note 1	Band XXV XXV/	MHz	-51.15	-51.15	-67.9	-67.9	-89.5	-89.5
							-90.46 -9.24 -19.7 -93 -92 -91 -89.5 (Note 2) -90	(Note 2)
	Band III, VIII, XII, XIII,						00	00
	XIV,XX, XXII						-90	-90
Propaga	ation condition	-	AW	GN	AW	GN	AWO	ЗN
NOTE 1	: CPICH Ec/lo and lo leve	els have been	calculated f	from other p	barameters	for informat	ion purposes.	They are not
*)	settable parameters the	mselves.						
*)	For the UE which suppo	orts both Band	III and Ban	d IX operati	ng frequen	aes, the me	asurement pe	rformance
	requirements for Band I	II shall apply to	the multi-t	Dand UE.		4		1 : : 41- :
NOTE2	: The test parameter is m	odified by -1.5	dB when tr	ne carrier fr	equency of	the assigne	d UTRA chant	nei is witnin
Tooto ob	UE UE DO SOUNT 200 600 600 000 000 000 000 000 000 000	which suppo	dono first /	iu v anu Ba		vecuted test	uencies.	r tocto 2
and 3 ch	all be set within 5 seconds	esti siidii De	uone motions. F	atha Coll 2	in between	the tests	parameters it	1 10515 2
NOTE 2 Tests sh and 3 sh	The test parameter is m 869-894 MHz for the UE all be done sequentially. The test within 5 seconds	odified by -1.5 which support est 1 shall be so that UE do	dB when the dB whe	ne carrier fr nd V and Ba After test 1 h e the Cell 2	equency of and XXVI op has been ex in betweer	the assigne perating free xecuted test on the tests.	d UTRA chanı juencies . parameters fo	nel is within

Table 8.7.3.1.4: UTRA Carrier RSSI Inter frequency absolute accuracy test parameters

The reported values for the UTRA Carrier RSSI absolute measurement shall meet the requirements in table 8.7.3.1.5.

Table 8.7.3.1.5: UTRA Carrier RSSI absolute accura	cy requirements for the reported values
--	---

	Test 1	Test 2	Test 3
	Norr	mal Conditions	
Lowest reported	UTRA_carrier_RSSI_LEV_4	UTRA_carrier_RSSI_LEV_2	UTRA_carrier_RSSI_LEV_0
value (Cell 2)	2	7	2
Highest reported	UTRA_carrier_RSSI_LEV_5	UTRA_carrier_RSSI_LEV_3	UTRA_carrier_RSSI_LEV_1
value (Cell 2)	7	8	3
	Extre	me Conditions	·
Lowest reported	UTRA_carrier_RSSI_LEV_3	UTRA_carrier_RSSI_LEV_2	UTRA_carrier_RSSI_LEV_0
value (Cell 2)	9	4	0
Highest reported	UTRA_carrier_RSSI_LEV_6	UTRA_carrier_RSSI_LEV_4	UTRA_carrier_RSSI_LEV_1
value (Cell 2)	0	1	6

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.2 Relative measurement accuracy requirement

8.7.3.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA Carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply for Release 6 and later releases to all types of UTRA for the FDD UE.

8.7.3.2.2 Minimum Requirements

The accuracy requirements in table 8.7.3.2.1 are valid under the following condition:

 $|Channel 1_Io|_{dBm/3.84 MHz} - |Channel 2_Io|_{dBm/3.84 MHz} < 20 dB.$

Table 8.7.3.2.1: UTRA Carrier RSSI Inter frequency relative accuracy

		Accuracy [dB]		Conditions						
Parameter	Unit	Normal	Extreme	Band I, IV, VI, X, X,I XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII		
		condition	condition	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84	lo [dBm/3.84		
				MHz]	MHz]	MHz]	MHz]	MHz]		
UTRACarrier	dBm	. 7		-9450	-9350	-9250	-90.550	-9150		
RSSI		± 7	± 11				(Note 1)			
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894										
MH z fo	or the UI	Ewhichsuppo	rts both Band	V and Band XX	VI operating fre	quencies.				

The normative reference for this requirement is TS 25.133 [2] clause 9.1.3.2.

8.7.3.2.3 Test purpose

The purpose of this test is to verify that the UTRA Carrier RSSI measurement is within the specified limits. This measurement is for inter-frequency handover evaluation.

8.7.3.2.4 Method of test

8.7.3.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on different frequencies and compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, Set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". UTRA Carrier RSSI relative accuracy requirements are tested by using test parameters in table 8.7.3.2.1A. UTRA carrier RSSI measurements of neighbour cell 2 and neighbour cell 3 are reported to serving cell 1.

				Test 1			Test 2			Test 3	
Para	ameter	Unit	Cell 1	Cell 2	Cell 3	Cell 1	Cell 2	Cell3	Cell 1	Cell 2	Cell 3
UTRAF	٦F		Channe	Chann	Channel	Channel	Channe	Chann	Channel	Channel	Chann
Channe	elnumber		1	el 2	3	1	12	el 3	1	2	el 3
CPICH	_Ec/lor	dB		-10			-10			-10	
PCCPC	CH_Ec/lor	dB		-12			-12			-12	
SCH_E	:c/lor	dB		-12			-12			-12	
	=C/IOF Ec/Ior	dB 0B	15	-15		6	-15	1	6	-15	
	Ec/lor	dB	-10	-0.94	-0.94	-2.56	-0.94	-0.94	-2.56	-0.94	-0.94
	Band I, IV, VI, X, XI, XIX, XXI			0.01	0.01	2.00			-94.45	-94.45	-75.45
	Band IX*								-93.45	-93.45	-74.45
	Band II, V, VII	dBm/							-92.45	-92.45	-73.45
loc	Band XXV, XXVI	3.84 MHz	-52.23	-52.23	-71.23	-91.27	-91.27	-81.27	-90.95 (Note 3)	-90.95 (Note 3)	-71.95 (Note 3)
	Band III, VIII, XII, XIII, XIV,XX, XXII								-91.45	-91.45	-72.45
Ïor/loc		dB	-1.75	-1.75	-1.75	-4.7	-4.7	-4.7	-9.54	-9.54	-9.54
CPICH	Ec/lo,	dBm	-14 0	-14 0	-14 0	-16.0	-16.0	-16.0	-20.0	-20.0	-20.0
Note 1		abiii	11.0	11.0	11.0	10.0	10.0	10.0	20.0	20.0	20.0
	Band I, IV, VI, X, XI, XIX, XXI								-94 (Note 2)	-94	-75
	Band IX*								-93 (Note 2)	-93	-74
lo, Note	Band II, V, VII	dBm/ 3.84	-50 (Note	-50	-69	-90	-90	-80	-92 (Note 2)	-92	-73
1	Band XXV, XXVI	MHz	2)			(Note 2)			-90.5 (Note 3)	-90.5 (Note 3)	-71.5 (Note 3)
	Band III, VIII, XII, XIII, XIV,XX, XXII								-91 (Note 2)	-91	-72
Propag conditio	ation on	-		AWGN			AWGN			AWGN	
NOTE : NOTE : *) NOTE :	 NOTE 1: CPICH Ec/lo and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. NOTE 2: lo levels are not reported by the UE on cell 1. *) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance requirements for Band III shall apply to the multi-band UE. NOTE 3: The test parameter is modified by -1.5 dB when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies. 										
Tests s 2 and 3	hall be done Sshall be se	e sequei et within	ntially. Tes 5 seconds	st 1 shall I so that L	be done firs JE does no	st. After tes t loos e Cel	t 1 has be I 2 or Cell	en execu 3 in betw	ted test pa een the tes	rameters fo sts.	or tests

Table 8.7.3.2.1A: UTRA Carrier RSSI Inter frequency relative accuracy test parameters

The normative reference for this requirement is TS 25.133 [2] clause A.9.1.3.2.

8.7.3.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.3.2.3.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message. The SS shall wait 6.8 seconds to allow UE to be ready for inter frequency measurements.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check UTRA carrier RSSI value of Channel 2 and Channel 3 in MEASUREMENT REPORT messages. UTRA carrier RSSI power value measured from Channel 3 is compared to UTRA carrier RSSI power value measured from Channel 2 for each MEASUREMENT REPORT message.
- 7) The result of step 6) is compared to actual power level difference of UTRA Carrier RSSI of Channel 3 and Channel 2.
- 8) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 9) The RF parameters are set up according to table 8.7.3.2.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6), 7) and 8) above are repeated.
- 10) The RF parameters are set up according to table 8.7.3.2.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 6), 7) and 8) above are repeated.
- 11) The SS shall transmit RRC CONNECTION RELEASE message.
- 12) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter frequency measurement (step 2):

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message	
	and writes to this IE. The first/ leftmost bit of the bit	
	string contains the most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its internal	
	counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	Not Present	
- CHOICE channel requirement	Not Present	

Information Element	Value/Remark	Version
	Value/Nemark	Version
-CHOICE mode		
Downlink PDSCH information	Not Present	P00 and Pol 4
	Notriesent	
Downlink information common for all radio links		Only
Downlink Information common for all PL	Not Procent	
Transmission gap pattern seguence		
TOPSI	1	
TOPS Status Floor	1 Activisto	
TOPS Status Flag	Activate	
Transmission con nottern convence	(Current CFN + (250 – 11)/10/1/sec))/1100/250	
- mainsmission gap patient sequence		
	FDD measurement	
	7	
	/ Not Procent	
TOD		
-IGD		
-IGPL1	3 Not Present	DOO and Dal 4
-TGPL2	Not Present	R99 and Rel-4
888		oniy
	Mode U	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	В	
	3.0	
	3.0	
-DeltaSIR2	Not Present	
-DeltaSIRatter2	Not Present	
-N Identify abort	Not Present	
- I Reconfirm abort	Not Present	
- I X Diversity Mode	Not Present	
-SSDT information	Not Present	R99 and Rel-4
		only
-Default DPCH Offset Value	Not Present	
-Downlink information per radio link list		
-Downlink information for each radio link		
-Choice mode	FDD	
-Primary CPICH into		
-Primary scrambling code	100	
-PDSCH with SHO DCH Info	Not Present	R99 and Rel-4
		only
-PDSCH code mapping	Not Present	R99 and Rel-4
		only
-Downlink DPCH info for each RL		
-CHOICE mode	FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used	
-DPCH frame offset	Set to value Default DPCH Offset Value (as	
	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No code change	
-TPC combination index	0	
-SSDT Cell Identity	Not Present	R99 and Rel-4
		only
-Closed loop timing adjustment mode	Not Present	
-SCCPCH Information for FACH	Not Present	

MEASUREMENT CONTROL message for Inter frequency measurement (step 4):

Information Element	Value/Remark
Message Type	Valao/Nonialik
LIE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
DDC measure converse number	significant bit of the MAC-I.
-RRC message sequence number	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 and Cell 3 information are included.
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non-used
	frequency
-Maximum number of reported cells	3
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.3.2.5 Test requirements

The UTRA Carrier RSSI relative measurement accuracy shall meet the requirements in clause 8.7.3.2.2. The effect of assumed thermal noise and noise generated in the receiver (-99 dBm for Band I, IV, VI, X, XI, XIX and XXI, -98dBm for Band IX, -97 dBm for Band II, V and VII, -96 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII, -95.5 dBm for Band XXV, XXVI) shall be added into the required accuracy defined in clause 8.7.3.2.2 as shown in table 8.7.3.2.2.

		Accuracy [dB]							
Parameter	Unit	Nor	mal condition	on	Extreme condition				
		Test 1	Test 2	Test 3	Test 1	Test 2	Test 3		
UTRA Carrier RSSI	dBm	± 7.9	± 8.8	± 8.9	± 11.9	± 12.8	± 12.9		

Table 8.7.3.2.2: UTRA Carrier RSSI relative accuracy, test requirements

Table 8.7.3.2.3: UTRA Carrier RSSI Inter frequency relative accuracy test parameters

Parameter	Unit		Test 1			Test 2			Test 3	
Parameter	Onit	Cell 1	Cell 2	Cell 3	Cell 1	Cell 2	Cell3	Cell 1	Cell 2	Cell 3
UTRARF		Channel	Channel	Channel	Channel	Channel	Channel	Channel	Channel	Channel
Channel		1	2	3	1	2	3	1	2	3
number			2	5	•	2	5		2	5
CPICH_Ec/lor	dB		-10			-10			-10	
PCCPCH_Ec/lo r	dB		-12			-12			-12	
SCH_Ec/lor	dB		-12			-12			-12	
PICH_Ec/lor	dB	4.5	-15			-15	1		-15	
DPCH_EC/lor	dB	-15	-	-	-6	-	-	-6	-	-
OCNS_EC/IOF	aв	-1.11	-0.94	-0.94	-2.56	-0.94	-0.94	-2.56	-0.94	-0.94
Band I, IV, VI, X, XI, XIX, XXI								-93.45	-93.45	-74.45
Band IX*								-92.45	-92.45	-73.45
loc Dand II,	dBm/ 3.84	-53.50	-53.50	-71.23	-91.27	-91.27	-81.27	-91.45	-91.45	-72.45
Band XXV, XXVI	MHz						-81.27	-89.95 (Note 3)	-89.95 (Note 3)	-70.95 (Note 3)
Band III, VIII, XII, XIII, XIV,XX								-90.45	-90.45	-71.45
lor/loc	dB	-1.45	-1.45	-1.45	-4.4	-4.4	-4.4	-9.24	-9.24	-9.24
CPICH Ec/lo,	dBm	-137	-137	-137	-15 7	-15 7	-15 7	-10.7	-10.7	-10.7
Note 1	ubiii	-13.7	-13.7	-13.7	-15.7	-15.7	-15.7	-19.7	-19.7	-19.7
Band I, IV, VI, X, XI, XIX, XXI								-93 (Note 2)	-93	-74
Band IX*								-92 (Note 2)	-92	-73
lo, Band II, Not V, VII	dBm/ 3.84	-51.15 (Note 2)	-51.15	-69	-90 (Note 2)	-90	-80	-91 (Note 2)	-91	-72
e 1 Band XXV, XXVI	MHz	((-89.5 (Note 3)	-89.5 (Note 3)	-70.5 (Note 3)
Band III, VIII, XII, XIII, XIV,XX								-90 (Note 2)	-90	-71
Propagation condition	-		AWGN			AWGN			AWGN	
NOTE 1: CPICI	HEc/loa	nd lo level	s have bee	en calculate	ed from oth	er parame	ters for info	mation pu	irposes. Th	ney are
not se NOTE 2: lo leve *) For the require	not settable parameters themselves. NOTE 2: Io levels are not reported by the UE on cell 1. *) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance									
NOTE 3: The te	estparam 94 MHz f	eter is mo	dified by -	1.5 dB whe	n the carrie Band V and	er frequence Band XX\	y of the as: /I operating	signed UTF a frequenci	RA channe	l is within
Tests shall be do	neseque	entially. Te	st1 shall l	be done firs	t. After tes	t 1 has bee	en executed	d test para	meters for	tests 2
and 3 shall be se	and 3 shall be set within 5 seconds so that UE does not loose Cell 2 or Cell 3 in between the tests.									

The frequency separation among 3 cells shall be at least 10 MHz to avoid overlapping the AWGN interference coming from different loc sources.

The reported values for the UTRA Carrier RSSI relative measurement shall meet the requirements in table 8.7.3.2.4.

	Test 1	Test 3	Test 3
	Nom	al Conditions	
Lowest reported	UTRA_carrier_RSSI_LEV_(UTRA_carrier_RSSI_LEV_(UTRA_carrier_RSSI_LEV_(
value (Cell 3)	x-26)	x+1)	x+ 10)
Highest reported	UTRA_carrier_RSSI_LEV_(UTRA_carrier_RSSI_LEV_(UTRA_carrier_RSSI_LEV_(
value (Cell 3)	x -10)	x+ 19)	x + 28)
	Extrem	ne Conditions	·
Lowest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_
value (Cell 3)	_(x - 30)	_(x-3)	_(x + 6)
Highest reported	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_	UTRA_carrier_RSSI_LEV_
value (Cell 3)	_(x - 6)	_(x + 23)	_(x + 32)
	UTRA_carrier_RSSI_LEV	x is the reported value of cel	2

Table 8.7.3.2.4: UTRA Carrier RSSI relative accuracy requirements for the reported values

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3A GSM Carrier RSSI

8.7.3A.1 Definition and applicability

The GSM carrier RSSI measurement is used for handover between UTRAN and GSM.

The requirements and this test apply to the combined FDD and GSM UE.

8.7.3A.2 Minimum Requirements

The UE shall meet the measurement accuracy requirements stated for RXLEV below, when the given measurement time allows the UE to take at least 3 GSM carrier RSSI samples per GSM carrier in the monitored set during the measurement period.

The absolute accuracy shall be as follows:

The R.M.S received signal level at the receiver input shall be measured by the UE and the BSS over the full range of -110 dBm to -48 dBm with an absolute accuracy of ± 4 dB from -110 dBm to -70 dBm under normal conditions and ± 6 dB over the full range under both normal and extreme conditions. The R.M.S received signal level at the receiver input shall be measured by the UE above -48 dBm up to -38 dBm with an absolute accuracy of ± 9 dB under both normal and extreme conditions.

If the received signal level falls below the reference sensitivity level for the type of UE or BSS, then the measured level shall be within the range allowing for the absolute accuracy specified above. In case the upper limit of this range is below the reference sensitivity level for the type of UE or BSS, then the upper limit shall be considered as equal to the reference sensitivity level.

The relative accuracy shall be as follows:

If signals of level x1 and x2 dBm are received (where $x1 \le x2$) and levels y1 and y2 dBm respectively are measured, if x2 - x1 < 20 dB and x1 is not below the reference sensitivity level, then y1 and y2 shall be such that:

 $(x_2 - x_1) - a \le y_2 - y_1 \le (x_2 - x_1 + b)$ if the measurements are on the same or on different RF channel within the same frequency band;

and

 $(x2 - x1) - c \le y2 - y1 \le (x2 - x1 + d)$ if the measurements are on different frequency bands:

a, b, c and d are in dB and depend on the value of x1 as follows:

	а	b	С	d
x1 ≥ s+14, x2< -48 dBm	2	2	4	4
s+14 > x1 ≥ s+1	3	2	5	4
s+1 > x1	4	2	6	4

For single band MS or BTS and measurements between ARFCN in the same band for a multiband

MS or BTS;

s = reference sensitivity level as specified in 3GPP TS 05.05 [28] for R99 and in 3GPP TS 45.005 [29] for Rel-4 and later releases.

For measurements between ARFCN in different bands;

s = the reference sensitivity level as specified in [28] and [29] for the band including x1.

At extreme temperature conditions an extra 2 dB shall be added to c and d in above table.

The selectivity of the received signal level measurement shall be as follows:

- for adjacent (200 kHz) channel \geq 16 dB;
- for adjacent (400 kHz) channel \geq 48 dB;
- for adjacent (600 kHz) channel \geq 56 dB.

The selectivity shall be met using random, continuous, GSM-modulated signals with the wanted signal at the level 20 dB above the reference sensitivity level.

The reporting range and mapping specified for RXLEV in TS 05.08[20] for R99 and in TS 45.008 [30] for Rel-4 and later releases shall apply.

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is:

For R99: TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 05.08 [20] clause 8.1.2.

For Rel-4 and later releases: TS 25.133 [2] clause 8.1.2.5 and 9.1.4 and TS 45.008 [30] clause 8.1.2.

8.7.3A.3 Test purpose

The purpose of this test is to verify that the GSM Carrier RSSI measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform GSM measurements, is within the specified limits. This measurement is for UTRAN to GSM handover evaluation.

8.7.3A.4 Method of test

8.7.3A.4.1 Initial conditions

Test environment: normal, TL/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In the test in Cell_DCH state compressed mode with purpose "GSM Carrier RSSI Measurement" is applied to measure on GSM. The gap length is 7, detailed definition is in clause C.5, Set 2 of table C.5.2 except for TGPRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 – TTI/10msec))mod 256". Table 8.7.3A.1 defines the limits of signal strengths and code powers on the UMTS FDD cell, where the requirement is applicable. In the measurement control information it is indicated to the UE that periodic reporting of the GSM RSSI measurement.

The requirements are also applicable for a UE not requiring compressed mode, in which case no compressed mode pattern should be sent for the parameters specified in table 8.7.3A.1.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in section C.3.1
		12.2 kbps	
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Compressed mode		Compressed mode reference pattern 2	As specified in table C.5.2 section C.5
patterns		Set 2	
- GSM carrier RSSI			
measurement			
Inter-RAT measurement		GSM Carrier RSSI	
quantity			
BSIC verification required		Not required	
Monitored cell list size		6 GSM neighbours	See Annex I for cell information
			Measurement control information is sent
			before the compressed mode patterns
			starts.

Table 8.7.3A.1:	General GS	M Carrier RSS	test parameters
			loor paramotoro

Table 8.7.3A.2: Cell specific GSM Carrier RSSI test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number	-	Channel 1
Ïor/loc	dB	-1
loc	dBm/ 3.84 MH z	-70
Propagation condition	-	AWGN

Table 8.7.3A.3: Signal levels at receiver input in dBm

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-38.5	-38.5	NA	NA	NA	NA
2	-48.5	-48.5	NA	NA	NA	NA
3	-70.5	-70.5	NA	NA	NA	NA
4	-109.5	-109.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

GSM band	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
GSM 450	276	293	264	269	281	288
GSM 480	323	340	311	316	328	335
GSM 900 for	110	124	1	90	80	100
FDD Band						
VIII(note1)						
GSM 900 for	62	124	20	40	80	100
FDD bands ≠						
FDD Band						
VIII		0.05			0.5.5	0.05
DCS 1800 for	/4/	885	585	660	855	835
FDD Band III						
and IX(Note2)	700	005	505	000	700	005
DUS 1800 for	700	885	585	660	790	835
FDD bands 7						
and IX						
PCS 1900 for	700	805	585	615	790	550
FDD Band	100	000	000	010	100	000
II(note3)						
PCS 1900 for	700	805	585	660	790	550
FDD bands ≠						
FDD Band II						
450/900	124	276	293	269	288	1
480/900	124	323	340	316	335	1
450/1800	885	276	293	269	288	512
480/1800	885	323	340	316	335	512
900/1800 for	885	1	124	90	100	512
FDD Band						
VIII(Note1)						
900/1800 for	885	62	124	40	100	512
FDD bands ≠						
FDD Band						
VIII 450/000/1800	104	276	005	202	1	510
430/900/1800	124	270	885	293	1	512
GSM 850 for	220	251	130	140	240	230
FDD Band V	220	201	150	140	240	200
VI and XIX						
(Note4)						
GSM 850	189	251	150	170	210	230
for FDD		_		_	_	
bands ≠ FDD						
Band V, VI						
and XIX						
GSM 750	475	511	440	455	485	500
750/850	251	475	511	455	485	128

- NOTE 1: The following BCCH ARFCN's specified for FDD Band VIII provide enough gap for a UMTS cell and its AWGN to be setup with centre frequency at UARFCN number 3013.
- NOTE 2: The following BCCH ARFCN's specified for FDD Band III and IX provide enough gap for a UMTS cell and its AWGN to be setup with centre frequency at UARFCN number 1375 and 9312.
- NOTE 3: The following BCCH ARFCN's specified for FDD Band II provide enough gap for a UMTS cell and its AWGN to be setup with centre frequency at UARFCN number 9800.
- NOTE 4: The following BCCH ARFCN's specified for FDD Band V, VI and XIX provide enough gap for a UMTS cell and its AWGN to be setup with centre frequency at UARFCN number 4400.

8.7.3A.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for cell 1 are set up according to table to table 8.7.3A.1 and 8.7.3A.2.
- 2) The RF parameters for two GSM cells are set up according to the step 1 in table 8.7.3A.5. The fading profile for the BCCHs will be set to static, see 51.010-1 [25]. The ARFCN numbers for GSM cells are set up according to table 8.7.3.A.4.
- 3) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message. Otherwise go to step 5.
- 4) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 5) SS shall transmit MEASUREMENT CONTROL message.
- 6) UE shall transmit periodically MEASUREMENT REPORT messages.
- 7) SS shall check GSM carrier RSSI value of the two GSM cells in MEASUREMENT REPORT messages. The GSM CARRIER RSSI values reported in the first measurement report are discarded. The SS records repeatedly GSM CARRIER RSSI values reported for the two BCCHs in each step. One report produces more than one mapped level or level difference. If the UE reports a value compliant with the applicable Table 8.7.3A.6 or 8.7.3A.7 or 8.7.3A.8 or 8.7.3A.9 then a success is recorded. Otherwise a failure is recorded. The successes and failures are assigned to the individual mapped levels or level differences. Repeat steps 7 according to Annex F.6.2 table 6.2.8. The repetition shall be continued, until the last mapped level or level difference experiences an early decision according to Annex F.6.2.
- 8) The RF parameters for two GSM cells are set up according to the next test step in table 8.7.3A.5.
- 9) Repeat procedure steps 7 and 8 until MEA SUREMENT REPORT messages from the test step 12 of Table 8.7.3A.5 have been recorded.

Specific Message Contents

All messages indicated above shall use the same content as described in the system information in clause 6.1.0b of 34.108 [3] and in default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter-RAT measurement (step 3):

Information Element	Value/Remark	Version
Message Type (10.2.22)		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IE. The first/	
	leftmost bit of the bit string contains the	
	most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info (10.3.6.36)	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	33 dBm	

Information Element	Value/Remark	Version
-CHOICE channel requirement	Not Present	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	R99 and Rel-4 only
-Downlink information common for all radio links		
(10.3.6.24)	Net Dresset	
(10.3.6.18)	Not Present	
-CHOICE mode	FDD	
-DPCH compressed mode info (10.3.6.33)		
- Transmission gap pattern sequence	1	
- TGPSI	1	
- TGPS Status Flag	activate	
- TGCFN	(Current CFN + (256 – TTI/10msec))mod	
	256	
- Transmission gap pattern sequence		
configuration parameters		
-IGMP	GSM carrier RSSI measurement	
-IGPRC	Infinity	
-IGSN	4	
	/ Not Proport	
-TGL2 -TGD		
-TGPI 1	12	
-TGPL2	Not Present	R99 and Rel-4 only
-RPP	mode 0	
-ITP	mode 0	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	В	
-DeltaSIR1	3.0	
-DeltaSIRatter1	3.0	
	Not Present	
-DeltaSIRaffer2	Not Present	
-N Identity abort	Not Present	
-TX Diversity mode (10 3 6 86)	None	
-SSDT information (10.3.6.77)	Not Present	R99 and Rel-4 only
-Default DPCH Offset Value (10.3.6.16)	Not Present	
-Downlink information per radio link list	1	
-Downlink information for each radio link		
(10.3.6.27)		
-CHOICE mode	FDD	
-Primary CPICH info (10.3.6.60)		
-Primary scrambling code	100	
-PDSCH with SHO DCH info (10.3.6.47)	Not Present	R99 and Rel-4 only
-PDSCH code mapping (10.3.6.43)	Not Present	R99 and Rel-4 only
-Downlink DPCH into for each RL (10.3.6.21)		
-CHOICE mode	FDD Primary CPICH may be used	
DPCH frame offect	Sot to value Default DPCH Offect Value (ac	
-DFCITItatile offset	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No change	
-TPC combination index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Closed loop timing adjustment mode	NotPresent	
- SCCPCH information for FACH (10.3.6.70)	Not Present	

MEASUREMENT CONTROL message for Inter-RAT measurement (step 5):

Information Element/Group name	Value/Remark	Version
Message Type (10.2.17)		
UE information elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IF. The first/	
	leftmost bit of the bit string contains the	
	most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
Measurement Information elements		
-Measurement Identity	2	
-Measurement Command (10.3.7.46)	Setup	
-Measurement Reporting Mode (10.3.7.49)		
-Measurement Report Transfer Mode	AMRLC	
-Periodical Reporting / Event Trigger Reporting	Periodical reporting	
Mode		
-Additional measurements list (10.3.7.1)	Not Present	
-CHOICE Measurement type	Inter-RAT measurement	
-Inter-RAT measurement (10.3.7.27)		
-Inter-RAT measurement objects list		
(10.3.7.23)		
-CHOICE Inter-RAT cell removal	Remove no inter-RAT cells	
-New Inter-RAT Cells	O	
-Inter-RAT cell lu	9+11 (11=0 to 5)	
-Cell individual offset	0	
-Cell selection and re-selection info	Not Present	
(10.324)		
-BSIC (10.3.8.2)		
-Base transœiver Station Identity Code	BSIC(1+n) for n=0, 1 according to 34,108 [3]	
(BSIC)	Table 6.1.10; for n=2 to 5 chosen arbitrarily	
()	by the test house such that it does not	
	collide with BSICs of other Inter-RAT cell ids	
-Band indicator	According to PICS/PIXIT	
-BCCH ARFCN	BCCH(1+n) according to Table 8.7.3A.4	
-Cell for measurement	Not Present	
-Inter-RAT measurement quantity (10.3.7.29)		
-Measurement quantity for UTRAN quality	Not Present	
estimate (10.3.7.38)		
-CHOICE system	GSM	
-Measurement quantity	GSM Carrier RSSI	
-Filter coefficient		
-BSIC vernication required	not required	
-Inter-RAT reporting quantity (10.3.7.32)		
	CSM	
-Observed time difference to GSM cell	FALSE	R99 and Rel-4 only
Reporting indicator		
-GSM carrier RSSI reporting indicator	TRUE	
-Reporting cell status (10.3.7.61)		
-CHOICE reported cell	Report cells within active set or within virtual	
	active set or of the other RAT	
-Maximum number of reported cells	6	
-CHOICE report criteria	Periodical reporting criteria	
-Periodical reporting criteria (10.3.7.53)		
-Amount of reporting	Infinity	
-Reporting interval	500 ms	
Physical channel information elements		
-DPCH compressed mode status info (10.3.6.34)	Not Present	

MEASUREMENT REPORT message for inter- RAT test cases

This message is common for all inter-RAT test cases in clause 8.7 and is described in Annex I.

8.7.3A.5 Test requirements

Table 8.7.3A.5: Signal levels at receiver input in dBm, test parameters for test requirements

Step	BCCH1	BCCH2	BCCH3	BCCH4	BCCH5	BCCH6
1	-39.5	-39.5	NA	NA	NA	NA
2	-49.5	-49.5	NA	NA	NA	NA
3	-71.5	-71.5	NA	NA	NA	NA
4	-108.5	-108.5	NA	NA	NA	NA
5	-57.5	NA	-54.5	NA	NA	NA
6	-64.5	NA	-59.5	NA	NA	NA
7	-71.5	NA	NA	-64.5	NA	NA
8	-78.5	NA	NA	-69.5	NA	NA
9	-85.5	NA	NA	NA	-74.5	NA
10	-92.5	NA	NA	NA	-79.5	NA
11	-99.5	NA	NA	NA	NA	-84.5
12	-106.5	NA	NA	NA	NA	-89.5

For the UE preliminarily to pass the absolute requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfil the following test requirements for each step and each test environment with a confidence level of 95%.

Table 8.7.3A.6: GSM Carrier RSSI absolute accurac	cy requirements for the reported values
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Step	Normal		TL/VL &	TH/VH
	Lowest reported	Highest reported	Lowest reported	Highest reported
	value for BCCH1	value for BCCH1	value for BCCH1	value for BCCH1
1	RXLEV = 61	RXLEV = 63	RXLEV = 61	RXLEV = 63
2	RXLEV = 54	RXLEV = 63	RXLEV = 54	RXLEV = 63
3	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
4	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 09
5	RXLEV = 46	RXLEV = 60	RXLEV = 46	RXLEV = 60
6	RXLEV = 39	RXLEV = 53	RXLEV = 39	RXLEV = 53
7	RXLEV = 34	RXLEV = 44	RXLEV = 32	RXLEV = 46
8	RXLEV = 27	RXLEV = 37	RXLEV = 25	RXLEV = 39
9	RXLEV = 20	RXLEV = 30	RXLEV = 18	RXLEV = 32
10	RXLEV = 13	RXLEV = 23	RXLEV = 11	RXLEV = 25
11	RXLEV = 06	RXLEV = 16	RXLEV = 04	RXLEV = 18
12	RXLEV = 00	RXLEV = 09	RXLEV = 00	RXLEV = 11
NOTE:	It is not mandatory for th	e UE to report BCCH1 ir	n step 12.	

For the UE preliminarily to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfil the following test requirements for each step and each test environment with a confidence level of 95%.

Ston	Normal & TL/VL & TH/VH		
Step			
	Lowest reported value for BCCH2	Highest reported value for BCCH2	
1	No requirements	No requirements	
2	RXLEV = x-4	RXLEV = x+4	
3	RXLEV = x-4	RXLEV = x+4	
4	RXLEV = x-6	RXLEV = x+4	
	Lowest reported value for BCCH3	Highest reported value for BCCH3	
5	RXLEV = x-1	RXLEV = x+7	
6	RXLEV = x+1	RXLEV = x+9	
	Lowest reported value for BCCH4	Highest reported value for BCCH4	
7	RXLEV = x+3	RXLEV = x+11	
8	RXLEV = x+5	RXLEV = x+13	
	Lowest reported value for BCCH5	Highest reported value for BCCH5	
9	RXLEV = x+7	RXLEV = x+15	
10	RXLEV = x+8	RXLEV = x+17	
	Lowest reported value for BCCH6	Highest reported value for BCCH6	
11	RXLEV = x+10	RXLEV = x+19	
12	RXLEV = x+11	RXLEV = x+21	
x is the reported value RXLEV for BCCH1			
NOTE: It is not mandatory for the UE to report BCCH1 in step 12.			

Table 8.7.3A.7: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different ARFCN within the same frequency band

For the UE preliminarily to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfil the following test requirements for each step and each test environment with a confidence level of 95%.

Step	Norr	nal	IL/VL & IH/VH	
	Lowest reported value	Highest reported	Lowest reported value	Highest reported
	for BCCH2	value for BCCH2	for BCCH2	value for BCCH2
1	No requirements	No requirements	No requirements	No requirements
2	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
3	RXLEV = x-6	RXLEV = x+6	RXLEV = x-8	RXLEV = x+8
4	RXLEV = x-8	RXLEV = x+6	RXLEV = x-10	RXLEV = x+8
	Lowest reported value	Highest reported	Lowest reported value	Highest reported
	for BCCH3	value for BCCH3	for BCCH3	value for BCCH3
5	RXLEV = x-3	RXLEV = x+9	RXLEV = x-5	RXLEV = x+11
6	RXLEV = x-1	RXLEV = x+11	RXLEV = x-3	RXLEV = x+13
	Lowest reported value	Highest reported	Lowest reported value	Highest reported
	for BCCH4	value for BCCH4	for BCCH4	value for BCCH4
7	RXLEV = x+1	RXLEV = x+13	RXLEV = x-1	RXLEV = x+15
8	RXLEV = x+3	RXLEV = x+15	RXLEV = x+1	RXLEV = x+17
	Lowest reported value	Highest reported	Lowest reported value	Highest reported
	for BCCH5	value for BCCH5	for BCCH5	value for BCCH5
9	RXLEV = x+5	RXLEV = x+17	RXLEV = x+3	RXLEX = x+19
10	RXLEV = x+6	RXLEV = x+19	RXLEV = x+4	RXLEV = x+21
	Lowest reported value	Highest reported	Lowest reported value	Highest reported
	for BCCH6	value for BCCH6	for BCCH6	value for BCCH6
11	RXLEV = x+8	RXLEV = x+21	RXLEV = x+6	RXLEV = x+23
12	RXLEV = x+9	RXLEV = x+23	RXLEV = x+7	RXLEV = x+25
x is the reported value RXLEV for BCCH1				
NOTE: It is not mandatory for the UE to report BCCH1 in step 12.				

Table 8.7.3A.8: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements on different frequency bands

For the UE preliminarily to pass the relative requirements of GSM Carrier RSSI measurement, at least 90% of the reported GSM Carrier RSSI measurements shall fulfil the following test requirements for each step and each test environment with a confidence level of 95%.

Step n	Step m	Normal & TL/VL & TH/VH		
		Lowest reported value for BCCH1 at	Highest reported value for BCCH1 at	
		step n	step n	
5	6	RXLEV = x+3	RXLEV = x+11	
5	7	RXLEV = x+10	RXLEV = x+18	
6	7	RXLEV = x+3	RXLEV = x+11	
6	8	RXLEV = x+10	RXLEV = x+18	
7	8	RXLEV = x+3	RXLEV = x+11	
7	9	RXLEV = x+10	RXLEV = x+18	
8	9	RXLEV = x+3	RXLEV = x+11	
8	10	RXLEV = x+9	RXLEV = x+18	
9	10	RXLEV = x+2	RXLEV = x+11	
9	11	RXLEV = x+9	RXLEV = x+18	
10	11	RXLEV = x+2	RXLEV = x+11	
10	12	RXLEV = x+8	RXLEV = x+18	
11	12	RXLEV = x+1	RXLEV = x+11	
x is the reported value of BCCH1 at step m				
NOTE: It is not mandatory for the UE to report BCCH1 in step 12.				

Table 8.7.3A.9: GSM Carrier RSSI Relative accuracy requirements for the reported values, measurements at single frequency (BCCH1)

For the UE finally to pass, all preliminary decisions must be decided pass.

FFS: 3 test-environments * 12 reporting periods * 3 levels per report = 108 individual pass fail decisions

An individual pass/fail decision has a wrong decision risk of 5%. All individual decisions must pass, to pass the entire test. As a consequence a UE with marginal performance for each individual level will pass each individual test with a probability of 95%, but will fail the entire test with high probability. It is for further study whether to:

- Accept this situation.
- Decrease the wrong decision risk for each individual test at the expense of additional test time, to increase the pass probability for the entire test.
- Introduce allowance to fail a limited number of individual tests.

8.7.3B Transport channel BLER

Void.

8.7.3C UE transmitted power (R99 and Rel-4 only)

8.7.3C.1 Definition and applicability

The UE transmitted power absolute accuracy is defined as difference between the UE reported value and the UE transmitted power measured by test system. The reference point for the UE transmitted power shall be the antenna connector of the UE.

The requirements and this test apply to the R99 and Rel-4 only FDD UE.

8.7.3C.2 Minimum requirements

The measurement period in CELL_DCH state is 1 slot.

Table 8.7.3C.2.1: UE transmitted	power absolute accuracy
----------------------------------	-------------------------

		Accuracy [dB]	
Parameter	Unit	PUEMAX 24dBm	PUEMAX 21dBm
UE reported power \geq PUEMAX	dBm	+1/-3	±2
PUEMAX > UE reported power ≥ PUEMAX-1	dBm	+1.5/-3.5	±2.5
PUEMAX-1 > UE reported power ≥ PUEMAX-2	dBm	+2/-4	±3
PUEMAX-2 > UE reported power ≥ PUEMAX-3	dBm	+2.5/-4.5	±3.5
PUEMAX-3 > UE reported power \ge PUEMAX-10	dBm	+3/-5	±4

NOTE 1: User equipment maximum output power, PUEMAX, is the maximum output power level without tolerance defined for the power class of the UE in TS 25.101 [1] section 6.2.1.

NOTE 2: UE transmitted power is the reported value.

For each empty slot created by compressed mode, no value shall be reported by the UE L1 for those slots.

The normative reference for this requirement is TS 25.133 [2] clause 9.1.6.

8.7.3C.3 Test purpose

The purpose of this test is to verify that for any reported value of UE Transmitted Power in the range PUEMAX to PUEMAX-10 that the actual UE mean power lies within the range specified in clause 8.7.3C.2.

8.7.3C.4 Method of test

8.7.3C.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1.

The test parameters are given in Table 8.7.3C.4.1 and 8.7.3C.4.2 below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used.

Table 8.7.3C.4.1: General test parameters for UE transmitted power

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1
DL-Power Control		Off	

Parameter	Unit	Cell 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	-3
OCNS_Ec/lor	dB	-5.2
\hat{I}_{or}/I_{oc}	dB	0
I _{oc}	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

8.7.3C.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters are set up according to table 8.7.3C.4.1 and 8.7.3C.4.2. Set the UE power and Maximum allowed UL TX power to the maximum power for the UE power class.
- 2) SS shall send continuously during the entire test Up power control commands to the UE.
- 3) SS shall transmit the MEASUREMENT CONTROL message as defined in the specific message contents below.

4) Decode the UE Transmitted power reported by the UE in the next available MEASUREMENT REPORT message.

- 5) Measure the mean power of the UE over a period of one timeslot.
- 6) Steps 4 and 5 shall be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 7) Decrease the Maximum allowed UL TX power by 1 dB. The SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message, as defined in the specific message contents below.
- 8) SS shall wait for the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE.
- 9) Repeat from step 4) until the Maximum allowed UL TX Power reaches PUEMAX-10.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	5
-Measurement Command	SETUP
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-Measurement quantity	UE Transmitted power
-Filter coefficient	0
-UE Internal reporting quantity	
-UE Transmitted power	TRUE
-CHOICE mode	FDD
-UE R x-T x time difference	FALSE
-CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
-Reporting interval	250
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-AdditionalMeasurementList	Not Present
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message:

Information Element	Value/remark	
Message Type		
Integrity check info	The presence of this IE is dependent on PIXIT statements in TS 34.123-2. If integrity protection is indicated to be active, this IE shall be present with the values of the sub IEs as stated below. Else, this IE and the sub-IEs shall be absent.	
- Message authentication code	This IE is checked to see if it is present. The value is compared against the XMAC-I value computed by SS.	
- RRC Message sequence number	This IE is checked to see if it is present. The value is used by SS to compute the XMAC-I value.	
Measurement identity	5	
Measured Results		
- CHOICE Measurement	UE Internal measured results	
- Choice mode	FDD	
- UE Transmitted power	Checked that this IE is present	
- UE R x-T x report entries	Checked that this IE is absent	
Measured results on RACH	Checked that this IE is absent	
Additional measured results	Checked that this IE is absent	
Event results	Checked that this IE is absent	

PHYSICAL CHANNEL RECONFIGURATION message:

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IE. The first/	
	leftmost bit of the bit string contains the most	
	significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	At the first time this value is set to PUEMAX-1.	
	After the second time this value is decreased	
	with 1 dB from previous value.	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	R99 and R4
-Downlink information common for all radio links	Not Present	only
-Downlink information per radio link list	Not Present	

8.7.3C.5 Test requirements

Compare each of the UE transmitted power reports against the following mean power measurement. At least 90% of the mean power measurements for any one value of reported UE transmitted power shall be within the range specified in table 8.7.3C.5.

	SS measured mean power (X) range [dBm]		
UE reported value	PUEMAX	PUEMAX	
	24dBm	21dBm	
UE_TX_POWER_104	33-3.7 ≤ X < 34+1.7	33-2.7 ≤ X < 34+2.7	
UE_TX_POWER_103	$32-3.7 \le X < 33+1.7$	$32-2.7 \le X < 33+2.7$	
•	•	•	
•	•	•	
•	•	•	
UE_TX_POWER_097	$26-3.7 \le X < 27+1.7$	•	
UE_TX_POWER_096	$25-3.7 \le X < 26+1.7$	•	
UE_TX_POWER_095	$24-3.7 \le X < 25+1.7$	•	
UE_TX_POWER_094	$23-4.2 \le X < 24+2.2$	$23-2.7 \le X < 24+2.7$	
UE_TX_POWER_093	$22-4.7 \le X < 23+2.7$	$22-2.7 \le X < 23+2.7$	
UE_TX_POWER_092	$21-5.2 \le X < 22+3.2$	21-2.7 ≤ X < 22+2.7	
UE_TX_POWER_091	$20-5.7 \le X < 21+3.7$	$20-3.2 \le X < 21+3.2$	
UE_TX_POWER_090	$19-5.7 \le X < 20+3.7$	$19-3.7 \le X < 20+3.7$	
UE_TX_POWER_089	18-5.7 ≤ X < 19+3.7	18-4.2 ≤ X < 19+4.2	
UE_TX_POWER_088	•	17-4.7 ≤ X < 18+4.7	
UE_TX_POWER_087	•	16-4.7 ≤ X < 17+4.7	
UE_TX_POWER_086	•	$15-4.7 \le X < 15+4.7$	
•	•	•	
•	•	•	
•	•	•	
UE_TX_POWER_022	$-49-5.7 \le X < -48+3.7$	$-49-4.7 \le X < -48+4.7$	
UE_TX_POWER_021	-50-5.7 ≤ X < -49+3.7	-50-4.7 ≤ X < -49+4.7	

- NOTE 1: Although test requirements are given for all UE reported values, a good UE will likely report values between PUEMAX and PUEMAX - 10 dB. However, even a good UE may report also wider range of values due to errors in TPC command reception and allowed range specified for UE transmit power setting accuracy when Maximum Allowed UL TX Power has been signalled. On the other hand, a faulty UE may report any power value but then it does not fulfil the Table 8.7.3C.5 requirements for mean power or then it will not pass some other tests e.g. TC 5.2 of this specification.
- NOTE 2: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3D UE transmitted power (Rel-5 and later)

8.7.3D.1 Definition and applicability

The UE transmitted power absolute accuracy is defined as difference between the UE reported value and the UE transmitted power measured by test system. The reference point for the UE transmitted power shall be the antenna connector of the UE.

The requirements and this test apply to Release 5 and later releases for the FDD UE.

8.7.3D.2 Minimum requirements

This requirement is applicable in CELL_DCH state. The measured quantity is the transmitted power averaged over the longest period (excluding a 25 µs period either side of any expected composite power change) during which the nominal composite symbol power reaches the maximum during 1 DPCH slot interval.

The normative reference for this requirement is TS 25.133 [2] clause 9.1.6.

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8.7.3D.3 Test purpose

The purpose of this test is to verify that for any reported value of UE Transmitted Power in the range specified in table 8.7.3D.5 that the actual UE mean power lies within the range specified in clause 8.7.3D.5.

8.7.3D.4 Method of test

8.7.3D.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1.

The test parameters are given in Table 8.7.3D.4.1 and 8.7.3D.4.2 below. In the measurement control information it shall be indicated to the UE that periodic reporting of the UE transmitted power measurement shall be used. The UE measured quantity absolute accuracy is defined in Table 8.7.3D.4.3.

Table 8.7.3D.4.1: General test parameters for UE transmitted power

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in clause C.3.1
DL-Power Control		Off	

Parameter	Unit	Cell 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DPCH_Ec/lor	dB	-3
OCNS_Ec/lor	dB	-5.2
\hat{I}_{or}/I_{oc}	dB	0
I _{oc}	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13
Propagation Condition		AWGN

Table 8.7.3D.4.2: Cell Specific parameters for UE transmitted power

Accuracy (dB)							
Reported value	(dBm)	note 1					
UE_TX_POWER _104	33 ≤ to < 34	note 2					
UE_TX_POWER _103	32 ≤ to < 33	not	te 2				
UE_TX_POWER _102	31 ≤ to < 32	not	te 2				
UE_TX_POWER _096	25 ≤ to < 26	not	te 2				
UE_TX_POWER _095	24 ≤ to < 25	2.0	-2.0				
UE_TX_POWER _094	23 ≤ to < 24	2.0	-2.0				
UE_TX_POWER _093	22 ≤ to < 23	2.0	-2.0				
UE_TX_POWER _092	21 ≤ to < 22	2.0	-2.0				
UE_TX_POWER _091	20 ≤ to < 21	2.5	-2.5				
UE_TX_POWER _090	19 ≤ to < 20	3.0	-3.0				
UE_TX_POWER _089	18 ≤ to < 19	3.5	-3.5				
UE_TX_POWER _088	17 ≤ to < 18	4.0	-4.0				
UE_TX_POWER _087	16 ≤ to < 17	4.0	-4.0				
UE_TX_POWER _086	15 ≤ to < 16	4.0	-4.0				
UE_TX_POWER _085	14 ≤ to < 15	4.0	-4.0				
UE_TX_POWER _084	13 ≤ to < 14	4.0*	-4.0 (note 3)				
UE_TX_POWER _083	12 ≤ to < 13	4.0*	-4.0 (note 3)				
UE_TX_POWER _082	11 ≤ to < 12	4.0*	-4.0 (note 3)				
UE_TX_POWER _081	10 ≤ to < 11	not	te 2				
UE_TX_POWER _023	UE_TX_POWER _023 -48 ≤ to < -47 note 2						
UE_TX_POWER _022 -49 ≤ to < -48 note 2							
UE_TX_POWER _021 -50 ≤ to < -49 note 2							
NOTE 1: The tolerance is specified for the maximum and minimum measured quantity							
value (dBm), i.e.							
MIN(Measured quantity value) + MIN(Accuracy)							
<= UE transmitted Power < Max (Measured quantity value) + MAX(Accuracy)							
NOTE 2: No tolerance i	OTE 2: No tolerance is specified.						
NOTE 3: Applicable to p	E 3: Applicable to power class 4						

	Table 8.7.3D.4.3:	UE transmitted	power rec	quirements
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8.7.3D.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters are set up according to table 8.7.3D.4.1 and 8.7.3D.4.2. Set the UE power and Maximu mallowed UL TX power to the maximu m power for the UE power class.
- 2) SS shall send continuously during the entire test Up power control commands to the UE.
- 3) SS shall transmit the MEASUREMENT CONTROL message as defined in the specific message contents below.

4) Decode the UE Transmitted power reported by the UE in the next available MEASUREMENT REPORT message.

- 5) Measure the mean power of the UE over the longest period (excluding a 25 µs period either side of any expected composite power change) during which the nominal composite symbol power reaches the maximum during one DPCH slot interval.
- 6) Steps 4 and 5 shall be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 7) Decrease the Maximum allowed UL TX power by 1 dB. The SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message, as defined in the specific message contents below.
- 8) SS shall wait for the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message from the UE.
- 9) Repeat from step 4) until the Maximum allowed UL TX Power reaches PUEMAX-10.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message:

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code -RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	5
-Measurement Command	SETUP
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-Measurement quantity	UE Transmitted power
-Filter coefficient	0
-UE Internal reporting quantity	
-UE Transmitted power	TRUE
-CHOICE mode	FDD
-UE Rx-Tx time difference	FALSE
-CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
-Reporting interval	250
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-AdditionalMeasurementList	Not Present
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message:

Information Element	Value/remark		
Message Type			
Integrity check info	The presence of this IE is dependent on PIXIT statements		
	in TS 34.123-2. If integrity protection is indicated to be		
	active, this IE shall be present with the values of the sub		
	IEs as stated below. Else, this IE and the sub-IEs shall be		
	absent.		
- Message authentication code	This IE is checked to see if it is present. The value is		
	compared against the XMAC-I value computed by SS.		
- RRC Message sequence number	This IE is checked to see if it is present. The value is used		
	by SS to compute the XMAC-I value.		
Measurement identity	5		
Measured Results			
- CHOICE Measurement	UE Internal measured results		
- Choice mode	FDD		
- UE Transmitted power	Checked that this IE is present		
- UE R x-T x report entries	Checked that this IE is absent		
Measured results on RACH	Checked that this IE is absent		
Additional measured results	Checked that this IE is absent		
Event results	Checked that this IE is absent		

PHYSICAL CHANNEL RECONFIGURATION message:

Information Element	Value/Remark	Version
Message Type		
UE Information Elements	0	
-RRC transaction identifier		
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IE. The first/	
	leftmost bit of the bit string contains the most	
	significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	At the first time this value is set to PUEMAX-1.	
	After the second time this value is decreased	
	with 1 dB from previous value.	
Downlink radio resources		
-Downlink PDSCH information	Not Present	
Downlink information common for all radio links	Not Present	K99 and K4
		oniy
-Downlink information per radio link list	Not Present	

8.7.3D.5 Test requirements

Compare each of the UE transmitted power reports against the following mean power measurement. At least 90% of the mean power measurements for any one value of reported UE transmitted power shall be within the range specified in table 8.7.3D.5.

Reported value	Measured quantity value (dBm)	Accurac	cy (dB) e 1			
UE_TX_POWER _104	33 ≤ to < 34	note	e 2			
UE_TX_POWER _103	32 ≤ to < 33	note	e 2			
UE_TX_POWER _102	31 ≤ to < 32	note 2				
UE_TX_POWER _096	25 ≤ to < 26	note	e 2			
UE_TX_POWER _095	24 ≤ to < 25	2.7	-2.7			
UE_TX_POWER _094	23 ≤ to < 24	2.7	-2.7			
UE_TX_POWER _093	22 ≤ to < 23	2.7	-2.7			
UE_TX_POWER _092	21 ≤ to < 22	2.7	-2.7			
UE_TX_POWER _091	20 ≤ to < 21	3.2	-3.2			
UE_TX_POWER _090	19 ≤ to < 20	3.7	-3.7			
UE_TX_POWER _089	18 ≤ to < 19	4.2	-4.2			
UE_TX_POWER _088	17 ≤ to < 18	4.7	-4.7			
UE_TX_POWER _087	16 ≤ to < 17	4.7	-4.7			
UE_TX_POWER _086	15 ≤ to < 16	4.7	-4.7			
UE_TX_POWER _085	14 ≤ to < 15	4.7	-4.7			
UE_TX_POWER _084	13 ≤ to < 14	4.7*	-4.7 (note 3)			
UE_TX_POWER _083	12 ≤ to < 13	4.7*	-4.7 (note 3)			
UE_TX_POWER _082	11 ≤ to < 12	4.7*	-4.7 (note 3)			
UE_TX_POWER _081	UE_TX_POWER _081 10 ≤ to < 11 note 2					
UE_TX_POWER _023 -48 ≤ to < -47 note 2						
UE_TX_POWER _022 -49 ≤ to < -48 note 2						
UE_TX_POWER _021 -50 ≤ to < -49 note 2						
NOTE 1: The tolerance is specified for the maximum and minimum measured quantity value						
(dBm), i.e.						
MIN(Measured quantity value) + MIN(Accuracy)						
<= UE transmitted Power < Max (Measured quantity value) + MAX(Accuracy)						
NOTE 2: No tolerance is specified.						
NOTE 3: Applicable to power class 4						

Table 8.7.3D.5: UE transmitted power test requirements

8.7.4 SFN-CFN observed time difference

8.7.4.1 Intra frequency measurement requirement

8.7.4.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

NOTE 1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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8.7.4.1.2 Minimum requirements

The accuracy requirement in table 8.7.4.1.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}$ for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2 $|_{dBm} \ge -112$ dBm for Bands II,V and VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$|CPICH _RSCP1|_{in \, dBm} - CPICH _RSCP2|_{in \, dBm}| \le 20 dB$$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} \quad - \quad \left(\frac{P - CCPCH - E_c}{I_{or}}\right)$$

 $\int dB$ is low enough to ensure successful SFN decoding.

Table 8.7.4.1.1: SFN-CFN observed time difference intra frequency accuracy

					Condi	tions	
		Δοοιποογ			lo [dBm/3	.84 MHz]	
Parameter	Unit	Ichinl	Band I, IV, VI, X,	Band IX	Band II, V and	Band XXV and	Band III, and
		[cilib]	XI, XIX and XXI		VII	XXVI	VIII, XII, XIII, XIV,
							XX and XXII
SFN-CFN observed	chin	⊥ 1	-94 -50	-93 -50	-92 -50	-90.550	-91 -50
time difference	cnip	ΞI	-9450	-9000	-9200	(Note 1)	-9150
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the							
UE which supports both Band V and Band XXVI operating frequencies.							

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.1 and A.9.1.4.2.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.1.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this case all cells are in the same frequency. Table 8.7.4.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

LIDIT	Test 1		Test 2		Test 3	
Onic	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
	Channel 1		Channel 1		Channel 1	
dB	-1	-10		-10		0
dB	-12		-12		-1	2
dB	-1	2	-12		-1	2
dB	-1	5	-15		-1	5
dB	-1	5	-15		-1	5
dB	-1.	11	-1.	11	-1.	.11
dB	10	.5	10	.5	10).5
dBm/3.84 MHz	lo –13.7	dB = loc,	lo –13.7	dB = loc,	lo –13.7	dB = loc,
	Not	e 1	Not	e 1	Not	te 1
					-9	94
			-72		-93	
dBm/3.84 MHz	-50	-92				
					-90.5 (N	lote 2,3)
					-9	91
SFN-CFN observed time						
difference as specified in TS chip						
25.215 [22] Note 4						
Propagation condition - AWGN AWGN AWGN						GN
ed according the total	signal pov	wer <i>lo</i> at re	ceiver inp	ut and the	geometry	factor
Îor/loc.						
*) For the UE which supports both Band III and Band IX operating frequencies, the measurement						
performance requirements for Band III shall apply to the multi-band UE.						
NOTE 2: The condition is -9270 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is						
within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.						
NOTE 3: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is						
within 009-094 MHZ for the UE which supports both Band V and Band XXVI operating frequencies.						
INUTE4: For example, x= 491520 or 9830399. This is a calculated value using parameters "UFF" and "Im" as						
specified in 15 25.215 [22].						
	dB dB dB dB dB dB dB dB dB dBm/3.84 MHz dBm/3.84 MHz chip - ed according the total orts both Band III and nts for Band III shall a '0 dBm/3.84 MHz whe the UE which suppor i0 dBm/3.84 MHz whe the UE which suppor	Clean 1 Chan dB -1 chip - chip - chip - chip - chip<	Clean P Clean 2 Channel 1 dB -10 dB -12 dB -12 dB -15 dB -15 dB -15 dB -15 dB -111 dB 10.5 dBm/3.84 MHz Io -13.7 dB = loc, Note 1 dBm/3.84 MHz -50 chip -	Clean I Clean 2 Clean 1 Channel 1 Channel 1	Cell I Cell Z Cell I Cell Z Channel 1 dB -12 -12 -12 -12 -12 -12 -13 -15 -15 -15 -15 -15 -15 -15 -15 -15 -15 -16 -10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 -13.7 dB = loc, Note 1 Note 1 Note 1 Note 1 -11 -11 -11 -11 -11 -11.1 -11.1 -11.1 -11.1 -11.1 -11.1 Note 1 Note 1 Note 1 -11 -11.1 -11.1 Note 1 Note 1 -11 -11.1 -11.1 -11.1 -11.1 Note 1 Note 1 -11 -11.1 -11.1 -11.1 -11.1 -11.1 Note 1 Note 1 Note 1 Note 1 Not	Cell 1 Cell 2 Cell 1 Cell 2 Cell 1 Cell 1

Table 8.7.4.1.2: SFN-CFN observed time difference Intra frequency test parameters

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed test parameters for tests 2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.

8.7.4.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.4.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT message.
- 4) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. This value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 5) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved
- 6) The RF parameters are set up according to table 8.7.4.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 7) The RF parameters are set up according to table 8.7.4.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 8) The SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTRO	. message for intra free	quency measurement
--------------------	--------------------------	--------------------

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
Ű	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	1
-Measurement Command	Modify
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Intra-frequency measurement
-Intra-frequency measurement	
- Intra-frequency measurement objects list	Not Present
-Intra-frequency measurement quantity	
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity	CPICH RSCP
-Intra-frequency reporting quantity	
-Reporting quantities for active set cells	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells	Not Present
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within
	monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.1.5 Test requirements

Table 8.7.4.1.3: SFN-CFN observed time difference intra frequency accuracy

					Condi	tions	
		Δορικαργ					
Parameter	Unit	[chin]	Band I, IV, VI, X,	Band IX	Band II, V and	Band XXV and	Band III, VIII, XII,
		[cillb]	XI, XIX and XXI		VII	XXVI	XIII, XIV, XX and
							XXII
SFN-CFN observed	chin	⊥ 15	-9450	-9350	-9250	-90.550	-9150
time difference	Chip	± 1.5					
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the							
UE which s	UE which supports both Band V and Band XXVI operating frequencies.						

Table 8.7.4.1.4: SFN-CFN observed time difference Intra frequency test parameters

Desemptor	l Init	Tes	st 1	Test 2		Te	Test 3	
Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Chan	Channel 1		Channel 1		annel 1	
CPICH_Ec/lor	dB	-1	0	-	-10		-10	
PCCPCH_Ec/lor	dB	-1	2	-'	12		-12	
SCH_Ec/lor	dB	-1	2	- '	12		-12	
PICH_Ec/lor	dB	-1	5	-'	15		-15	
DPCH_Ec/lor	dB	-1	5	-'	15		-15	
OCNS_Ec/lor	dB	-1.	11	-1	.11	-1	1.11	
lor/loc	dB	10	.8	1(D.8	1	10.8	
Band I, IV, VI, X, XI, XIX, XXI						-1	06.7	
Band IX*						-1	05.7	
loc Band II, V, VII	dBm/3.84 MHz	-65	5.3	-8	5.7	-1	04.7	
Band XXV, XXVI						-103.2	(Note 2,3)	
Band III, VIII, XII, XIII, XIV, XX, XXII						-1	03.7	
Band I, IV, VI, X,						-{	92.7	
Band IX*	_					-9	91 7	
lo. Note 1 Band II. V. VII	dBm/3.84 MHz	-51.3		-7	-71.7		90.7	
Band XXV, XXVI					-89.2 ((Note 2,3)		
Band III, VIII, XII,						90.7		
XIII, XIV, XX, XXII					-0	69.7		
SFN-CFN observed time difference	chin			•	Х			
as specified in TS 25.215 [22]	chip	Note 4						
Propagation condition	-	AWGN AWGN AV				AV	WGN	
NOTE 1: lo level has been calcula	ted from other param	neters for in	nformation	purposes	. It is not a	settable p	parameter	
itself.								
*) For the UE which suppor	ts both Band III and	Band IX op	perating fre	equencies	, the measu	urement		
performance requiremen	ts for Band III shall a	pply to the	multi-ban	auettees			a a l ia	
NOTE 2. The condition is -9270	0 GBM/3.84 MHZ WNE	n the carri	er frequen	cy of the a	ssigned U	RAchar	ineris	
within 809-694 IVITZ for the UE which supports both Band V and Band XXVI operating frequencies.							es.	
within 860-804 MHz for th	Dubin/3.04 Minz whe	n uie cain Is both Bar	d V and B	and XXV/I	operating f	requenci		
NOTE4: For example x- 491520	or 9830399 This is :	a calculate	d value us	ing param	eters "OFF	and "Tn	ເວ. ກ" ລຣ	
specified in TS 25 215 [2	21		u value us	ing param			11 45	
Tests shall be done sequentially. Te	st 1 shall be done fi	st. After te	st1 has be	en execu	ted test par	rameters	for tests 2	
and 3 shall be set within 5 seconds	so that UE does not	loose the (Cell 2 in be	tween the	tests.		L	

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported "OFF" and "Tm" values shall meet the requirements in table 8.7.4.1.5.

Table 8.7.4.1.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)
SFN-CFN_TIME (X) is the re	ported value for the actual SF	FN-CFN observed time differe	ence value as defined in
table 8.7.4.1.4			

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2 Inter frequency measurement requirement

8.7.4.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.8 of TS 25.215 [22].

The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.4.2.2 Minimum requirements

The accuracy requirement in table 8.7.4.2.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114$ dBm for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2|_{dBm}≥ -112 dBm for Bands II, V and VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \le 20 dB$$

 $| Channel 1_Io|_{dBm'3.84 MHz} - Channel 2_Io|_{dBm'3.84 MHz} | \le 20 dB.$

$$\frac{I_o}{(\hat{I}_{or})}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.4.2.1: SFN-CFN observed time difference inter frequency accuracy

				Conditions				
		Δορικάον		lo [dBm/3.84 MHz]				
Parameter	Unit	[chin]	Band I, IV, VI, X,	Band IX	Band II, V and VII	Band XXV and	Band III, VIII, XII,	
		[cillb]	XI, XIX and XXI			XXVI	XIII, XIV, XX and	
							XXII	
SFN-CFN						-90.5 -50		
observed time	chip	± 1	-9450	-9350	-9250	(Note 1)	-9150	
difference						(
IOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the								
UE whi	chsuppo	orts both Band V	/ and Band XXVI ope	erating frequencies.				

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.7.2 and A.9.1.4.2.

8.7.4.2.3 Test purpose

The purpose of this test is to verify that the SFN-CFN observed time difference measurement accuracy is within the specified limits in the clause 8.7.4.2.2. This measurement is for handover timing purposes to identify active cell and neighbour cell time difference.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

In this test case both cells are on different frequencies.

For UEs that require compressed mode, compressed mode is applied. The gap length is 7, detailed definition is in clause C.5, set 1 of table C.5.2 except for TGRRC and TGCFN. TGPRC and TGCFN shall set to "Infinity" and "(Current CFN + (256 - TTI/10msec))mod 256". When compressed mode is in use, the OFF parameter will always be set to 0 as described in TS 25.215 clause 5.1.8

For UEs that do not require compressed mode, compressed mode is not applied and therefore no Physical Channel Reconfiguration message will be sent. In this case, the OFF parameter will be a measured value.

Table 8.7.4.2.2 defines the limits of signal strengths and code powers, where the requirement is applicable.

Table 8.7.4.2.2: SFN-CFN observed time difference Inter frequency tests parameters

Desemptor		Linit	Tes	Test 1		Test 2		Test 3	
	Farameter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRARE	Channel number		Channel	Channel	Channel	Channel	Channel	Channel	
			1	2	1	2	1	2	
CPICH_E	c/lor	dB	-1	0	-1	0	-1	0	
PCCPCH_	_Ec/lor	dB	-1	2	-1	2	-1	2	
SCH_Ec/le	or	dB	-1	2	-1	2	-1	2	
PICH_EC/I	or	dB	-1	5	-1	5	-1	5	
DPCH_EC	/lor	dB	-1	5	-1	5	-1	5	
OCNS_EC	lor	dB	-1.	11	-1.	11	-1.	11	
lor/loc		dB	10	0.1	10).1	10	1.1	
loc		dBm/3.84 MHz	lo –10.6	dB = loc,	lo –10.6	dB = loc,	lo –10.6	dB = loc,	
			Not	e 1	Not	ie 1	Not	.e 1	
	Band I, IV, VI, X,						-94		
								0	
1-	Band IX"	al Direc /O. 0.4. Million	-50		-72		-93		
10	Darid II, V, VII						-92 00 5 (Noto 2.2)		
								ote 2,3)	
							-9)1	
					i				
difference	as specified in TS	chin	X						
25 215 [22		Cilip	Note 4						
Propagatio	- <u>n</u> condition	-	AW	GN	AW	GN	AW	GN	
NOTE 1	loc level shall be adjust	ed in each carrier free	nuency acc	cording the	total signa	al nower <i>lo</i>	at receive	er input	
	and the geometry factor	lor/loc	quonoyuo	borunig tric	lotal olgri			mput	
*)	For the UE which suppo	orts both Band III and	Band IX o	perating fr	equencies	, the meas	urement		
/	performance requireme	ents for Band III shall a	apply to the	e multi-bar	nd UE.	,			
NOTE 2: The condition is -9270 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is							nel is		
within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.							es.		
NOTE 3: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is						nel is			
	within 869-894 MHz for	the UE which support	rts both Ba	nd V and E	Band XXVI	operating	frequencie	×S.	
NOTE4:	For example, x= 49152	0 or 9830399. This is	a calculate	ed value us	sing param	eters "OFI	F" and "Tm	i" as	
	specified in TS 25.215	[22].							
Tests shal	l be done sequentially.	est 1 shall be done fi	irst. After te	est 1 has b	een execu	ited test pa	arameters	or tests	
2 and 3 sh	2 and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

8.7.4.2.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.4.2.4.
- 2) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message. Otherwise go to step 4.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.8 of TS 25.215 [22]. Note that according to TS 25.215 [22] UE will always report the "OFF" parameter as zero in the specific case where compressed mode is in use. In other cases, the "OFF" parameter will be a measured value. This should be taken into account when calculating the SFN-CFN observed time difference value. This calculated value shall be compared to the actual SFN-CFN observed time difference value for each MEASUREMENT REPORT message.
- 7) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.

- 8) The RF parameters are set up according to table 8.7.4.2.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5), 6) and 7) above are repeated.
- 9) The RF parameters are set up according to table 8.7.4.2.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5), 6) and 7) above are repeated.
- 10) The SS shall transmit RRC CONNECTION RELEASE message.
- 11) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement

Information Element	Value/Remark	Version
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message and	
	writes to this IE. The first/ leftmost bit of the bit string	
	contains the most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its internal	
	counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-LIRA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Liplink radio resources	Norriesent	
	Not Present	
- CHOICE channel requirement	Not Present	
	Norriesent	
CHOICE mode		
-Downlink PDSCH information	Not Present	P00 and Pol-4
	Nothesent	
-Downlink information common for all radio		Only
Downlink DRCH info common for all Pl	Not Procent	
DPCH compress of mode info		
Transmission gap pattern asquenes		
	1	
TOPS Status Flag	l Activisto	
TOCEN	Activate	
Transmission can not torn acqueres	(Current CFN + (250 - 11)/10115eC))(1100/250)	
- mansinssion gap patient sequence		
	EDD mossurement	
	7	
	Not Procent	
-100	טאטברואבט	1

Information Element	Value/Remark	Version
-TGPL1	3	
-TGPL2	Not Present	R99 and Rel-4
		only
-RPP	Mode 0	
	Mode 0	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	B	
	3.0	
	3.U Not Propost	
-DeliaSINZ DeltaSIRefter2	Not Present	
-DeliaSikalleiz	Not Present	
T Poconfirm abort	Not Present	
TX Diversity Mede	Not Present	
-SSDT information	Not Present	R00 and Rol-1
	Noth resent	only
-Default DPCH Offset Value	Not Present	only
-Downlink information per radio link list		
-Downlink information for each radio link		
-Choice mode	FDD	
-Primary CPICH info		
-Primary scrambling code	100	
-PDSCH with SHO DCH Info	Not Present	R99 and Rel-4
		only
-PDSCH code mapping	Not Present	R99 and Rel-4
		only
-Downlink DPCH info for each RL		
-CHOICE mode	FDD	
-Primary CPICH usage for channel	Primary CPICH may be used	
estimation		
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently	
	stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No code change	
- IPC combination index	U Not Procent	DOO and Dol 4
		R99 and Rel-4
Closed loop timing adjustment made	Not Procent	only
	Not Present	
	ווטנו ובפלוונ	

MEASUREMENT CONTROL message for Inter frequency measurement

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	

Information Element	Value/Remark
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	
-Inter-frequency measurement quantity	Inter-frequency reporting criteria
-CHOICE reporting criteria	
-Filter coefficient	0
-CHOICE mode	FDD
 Measurement quantity for frequency quality 	CPICH RSCP
estimate	
-Inter-frequency reporting quantity	
-UTR A Carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities	
-Cell synchronisation information reporting	TRUE
indicator	
-Cell Identity reporting indicator	TRUE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report cells within monitored set on non-used
	frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency test cases in clause 8.7 and is described in Annex I.

8.7.4.2.5 Test requirements

Table 8.7.4.2.3: SFN-CFN observed time difference inter frequency accuracy

				Conditions				
		Accuracy		lo [dBm/3.84 MHz]				
Parameter	Unit	[chip]	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II, V and VII	Band XXV and XXVI	Band III, VIII, XII, XIII, XIV, XX and XXII	
SFN-CFN observed time difference	chip	± 1.5	-9450	-9350	-9250	-90.550 (Note 1)	-9150	
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the								
	UE which supports both Band V and Band XXVI operating frequencies.							
_			Tes	t 1	Test 2		Test 3	
---	---	-------------------------	---------------	--------------	-------------	---------------	------------------	-----------
	Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number			Channel	Channel	Channel	Channel 2	Channel	Channel
CPICH Ec/lor		dB	-1	0	-1	0	-1	0
PCCPCH	Ec/lor	dB	-1	2	-1	2	-1	2
SCH Ec/lo)r	dB	-1	2	-1	2	-1	2
PICH_Ec/le	or	dB	-1	5	-1	5	-1	5
DPCH_Ec/	lor	dB	-1	5	-1	5	-1	5
OCNS_Ec/	/lor	dB	-1.	11	-1.	11	-1.	11
lor/loc		dB	10	.4	10	.4	10	.4
	Band I, IV, VI, X, XI, XIX, XXI						-10	3.5
	Band IX*					-102.9		2.5
loc	Band II, V, VII	dBm/ 3.84 MHz	-62	2.1	-82.6		-10	1.5
	Band III VIII VII					-100.0 (N		10te 2,3)
	XIII, XIV, XX, XXII						-100.5	
	Band I, IV, VI, X, XI, XIX, XXI						-92	2.7
	Band IX*		-51.3				-91	.7
lo, Note 1	Band II, V, VII	dBm/3.84 MHz			-71	.8	-90).7
	Band XXV, XXVI						-89.2 (Note 2,3)	
	Band III, VIII, XII,						-80	7
	XIII, XIV, XX, XXII						00.1	
SFN-CFN	observed time				,	¢		
difference 25.215 [22	as specified in TS	chip		Note 4				
Propagatio	n condition	-	AW	AWGN AWGN		GN	AW	GN
NOTE 1:	lo level has been calculat	ted from other param	eters for in	formation	ourposes.	lt is not a s	ettable pa	rameter
	itself.							
*)	For the UE which suppor	ts both Band III and E	Band IX ope	erating free	quencies, t	he measu	rement per	formance
	requirements for Band III shall apply to the multi-band UE.							ol io
NOTE 2. The condition is -9270 upin/3.04 Minz when the Carrier frequency of the assigned OTRA channel is within 960, 904 MHz for the LIE which supports both Rend V and Rend XXV/ operating frequencies								
NOTE 3	The condition is -92 -50	dBm/3.84 MHz wher	the carrie	r frequenc	v of the as	signed LIT	RA channe	alis
within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.								
NOTE4:	For example, x= 491520	or 9830399. This is a	calculated	value usi	ng parame	ters "OFF"	and "Tm"	as
	specified in TS 25.215 [2	2].			01.000			
Tests shall	be done sequentially. Te	st 1 shall be done firs	st. After tes	t1 has be	en execute	ed test para	ameters for	r tests 2
and 3 shall be set within 5 seconds so that UE does not loose the Cell 2 in between the tests.								

Table 8.7.4.2.4: SFN-CFN observed time difference Inter frequency tests parameters

The accuracy of the SFN-CFN observed time difference measurement value calculated from the reported "OFF" and "Tm" values shall meet the requirements in table 8.7.4.2.5.

Table 8.7.4.2.5: SFN-CFN observed time difference measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)	SFN_CFN_TIME (X - 2)			
Highest reported value	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)	SFN_CFN_TIME (X + 2)			
SFN-CFN_TIME (X) is the reported value for the actual SFN-CFN observed time difference value as defined in						
table 8.7.4.2.4. Note that the "OFF" parameter is always set to zero in the specific case where compressed mode						
is in use.						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.5 SFN-SFN observed time difference

8.7.5.1.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE.

8.7.5.1.2 Minimum requirements

The accuracy requirement in table 8.7.5.1.1 is valid under the following conditions:

CPICH_RSCP1,2|_{dBm}≥ -114 dBm for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2 $|_{dBm} \ge -112 \text{ dBm}$ for Bands II, V and VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV, and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\begin{aligned} \left| CPICH _RSCP1 \right|_{in \, dBm} - CPICH _RSCP2 \right|_{in \, dBm} \right| &\leq 20 dB \\ \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in \, dB} &- \left(\frac{CPICH _E_c}{I_{or}} \right) \right|_{in \, dB} \leq 20 dB \\ \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in \, dB} &- \left(\frac{P - CCPCH _E_c}{I_{or}} \right) \right|_{in \, dB} \text{ is low arough to} \end{aligned}$$

 $\int dB$ is low enough to ensure successful SFN decoding.

Table 8.7.5.1.1: SFN-SFN observed time difference type 1 measurement accuracy

				Conditions						
					lo [dBm/3.84 MHz]					
Parameter	Unit	Accuracy [chip]	Band I, IV, VI,	Band IX	Band II, V and	Band XXV and	Band III, VIII,			
			X, XI, XIX and		VII	XXVI	XII, XIII, XIV,			
			XXI				XX and XXII			
SFN-SFN observed	chin	± 1	-94 -50	-93 -50	-92 -50	-90.550	-91 -50			
time difference type1	cilip	± !	-3430	-3000	-3230	(Note 1)	-3130			
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for										
the UE which s	supports	both Band V and Bar	nd XXVI operating	g frequencies.						

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.1.1 and A.9.1.5.1.2.

8.7.5.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.5.1.2. This measurement is for identifying time difference between two cells.

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8.7.5.1.4 Method of test

8.7.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

During the test the timing difference between Cell 1 and 2 can be set to value from 0...9830399 chips.

1) Connect SS to the UE antenna connector as shown in figure A.14.

In this case all cells are in the same frequency. Table 8.7.5.1.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.1.2: SFN-SFN observed th	me amerence typ	e i intra fred	quency test	parameters

Baramatar	Linit	Tes	Test 1		Test 2		Test 3	
Falainetei	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRA RF Channel number		Chan	nel 1	Channel 1		Channel 1		
CPICH_Ec/lor	dB	-1	0	-1	0	-1	0	
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	
SCH_Ec/lor	dB	-1	2	-1	2	-1	2	
PICH_Ec/lor	dB	-1	5	-1	5	-1	5	
S-CCPCH_Ec/lor	dB	-1	2	-1	2	-1	2	
OCNS_Ec/lor	dB	-1.:	<u>29</u>	-1.	29	-1.	29	
Îor/loc	dB	10	.5	10).5	10).5	
loc	dBm/384MHz	lo –13.7 (dB = loc,	lo –13.7	dB = loc,	lo –13.7	dB = loc,	
		Not	e 1	Not	te 1	Not	te 1	
Band I, IV, VI, X, XI, XIX, XXI						-9	94	
Band IX*						-9)3	
lo Band II, V, VII	dBm/3.84 MHz	-5	0	-7	2	-9)2	
Band XXV, XXVI						-90.5 (N	lote 2,3)	
Band III, VIII, XII, XIII, XIV, XX, XXII						-9)1	
SFN-SFN observed time					v			
difference type 1 as specified in	chip	Note 4						
TS 25.215 [22]				110				
Propagation condition	-	AWGN AWGN		AW	GN			
NOTE 1: <i>loc</i> level shall be adju	sted according the tota	alsignal po	wer lo at	receiver in	put and the	egeometry	factor	
lor/loc.								
*) For the UE which sup	ports both Band III and	d Band IX (perating f	requencies	s, the meas	surement		
performance requirem	ients for Band III shall	apply to th	e multi-ba	nd UE.			an al ia	
NOTE 2: The condition is -92	-70 0 Brn/3.84 IVIHZ Wr	nen the car	rier freque	ency of the	assigned (JIRA Chai	nner is	
within 609-694 WHZ for the OE which supports both Band v and Band AAV operating frequencies.						es.		
within 860 804 MHz f	-50 0 DITI/3.64 MIZ WI	nen ine car	ner reque	Rond XXV	assigned (J I KA Chai		
	$\frac{1}{20}$ or 0830300 This is			bariu AAV	arameters	"OFF" and	Ito. I "Tm" as	
specified in TS 25 21	5 [22]			ising the p	arameters		1111 03	
Tests shall be done sequentially	Test 1 shall be done	first After t	est1has	been exer	uted test n	arameters	for tests	
2 and 3 shall be set within 5 sec	onds so that UE does	not loose t	ne Cell 2 ii	n between	the tests.			

8.7.5.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.5. The RF parameters for Test 1 are set up according to table 8.7.5.1.4.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT messages.
- SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.

- 5) SS shall check MEA SUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 6) The RF parameters are set up according to table 8.7.5.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated
- 7) The RF parameters are set up according to table 8.7.5.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 4) and 5) above are repeated.
- 8) The SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 6.1.0b of 34.108 [3] and clause 9 of 34.108 [3], with the following exceptions:

Contents of System Information Block type 11 (FDD) (Step 1):

Information Element	Value/Remark
 Intra-frequency measurement system information 	
 Intra-frequency reporting quantity for RACH Reporting 	
 SFN-SFN observed time difference reporting indicator 	type 1
- CHOICE mode	FDD
- Reporting quantity	CPICH RSCP
- Maximum number of reported cells on RACH	current cell + best neighbour

MEASUREMENT CONTROL message for Traffic Volume measurement (Step 2):

Information Element/Group name	Value/Remark	
Message Type (10.2.17)		
UE information elements		
- RRC transaction identifier	0	
- Integrity check info		
- message authentication code - RRC message sequence number	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I. SS provides the value of this IE, from its	
	Internal counter.	
Measurement Information elements		
- Measurement Command (10.2.7.46)	4 Satur	
Measurement Departing Mode (10.3.7.40)	Setup	
Monsurement Reporting Mode (10.5.7.49)		
Pariodical Paparting / Event Trigger Paparting Mode	Review Reveal reporting	
- Additional measurements list (10.3.7.1)	Not Present	
- CHOICE Measurement type (10.3.7.68)	Traffic Volume measurement	
- Traffic volume measurement		
Object (10.3.7.70)		
- Traffic volume measurement objects	1	
- Uplink transport channel type	RACHorCPCH	R99 and Rel-4
		only
- Uplink transport channel type	RACH	Rel-5
- UL Target Transport Channel ID	Not Present	
- Traffic volume measurement		
quantity (10.3.7.71)		
- Measurement quantity	RLC Buffer Payload	
- Time Interval to take an average or a variance	Not Present	
- Traffic volume reporting quantity (10.3.7.74)		
- RLC Buffer Payload for each RB	FALSE	
- Average of RLC Buffer Payload for each RB	FALSE	
- Variance of RLC Buffer Payload for each RB	FALSE	

Information Element/Group name	Value/Remark	
- Measurement validity (10.3.7.51)	Not Present	
- CHOICE report criteria (10.3.7.53)	Periodical reporting criteria	
- Amount of reporting	Infinity	
- Reporting interval	250 ms	
Physical channel information elements		
-DPCH compressed mode status info (10.3.6.34)	Not Present	

MEASUREMENT REPORT message for SFN-SFN observed time difference type 1 test case (Step 3)

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in
	active this IF shall be present with the values of the sub
	IEs as stated below. Else, this IE and the sub-IEs shall be
	absent.
- Message authentication code	This IE is checked to see if it is present. The value is
	compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used
	by SS to compute the XMAC-I value.
Measurement identity	4
Measured Results	Checked that this IE is absent
Measured results on RACH	Checked that this IE is present
 Measurement result for current cell 	Checked that this IE is present
- CHOICE mode	FDD
- CHOICE measurement quantity	Checked that this IE is present
- Measurement results for monitored cells	1
 SFN-SFN observed time difference 	Checked that this IE is present
- CHOICE Type	Туре 1
- CHOICE mode	FDD
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

8.7.5.1.5 Test requirements

Table 8.7.5.1.3: SFN-SFN observed time difference type 1 measurement accuracy

				Conditions				
					lo [dBm/3.84 MHz]			
Parameter	Unit	Accuracy [chip]	Band I, IV, VI,	Band IX	Band II, V	Band XXV	Band III, VIII,	
			X, XI, XIX and		and VII	and XXVI	XII, XIII, XIV,	
			XXI				XX and XXII	
SFN-SFN observed time	chin	+ 1 5	-94 -50	-93 -50	-92 -50	-90.550	-91 -50	
difference type1	unp	± 1.5	-3430	-3000	-3230	(Note 1)	-3150	
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for								
the UE which supp	orts both	Band V and Band X	XXVI operating fr	equencies.				

Parameter		l Init	Test 1	Test 2	Test 3	
		Unit	Cell 1 Cell 2	Cell 1 Cell 2	Cell 1 Cell 2	
UTRARF	Channel number		Channel 1	Channel 1	Channel 1	
CPICH_E	c/lor	dB	-10	-10	-10	
PCCPCH	_Ec/lor	dB	-12	-12	-12	
SCH_Ec/I	or	dB	-12	-12	-12	
PICH_Ec/	lor	dB	-15	-15	-15	
S-CCPCH	L_Ec/lor	dB	-12	-12	-12	
OCNS_Ec	c/lor	dB	-1.29	-1.29	-1.29	
Îor/loc		dB	10.8	10.8	10.8	
loc lo, Note 1	Band I, IV, VI, X, XI, XIX, XXI Band IX* Band II, V, VII Band XXV, XXVI Band III, VIII, XII, XIII, XIV, XX, XXII Band I, IV, VI, X, XI, XIX, XXI Band IX* Band II, V, VII Band XXV, XXVI Band III, VIII, XII, XIII, XIV, XX.	dBm/ 3.84 MHz dBm/3.84 MHz	-65.3 dB -51.3	-85.7 -71.7	-106.7 -105.7 -104.7 -103.2 (Note 2,3) -103.7 -92.7 -91.7 -90.7 -89.2 (Note 2,3) -89.7	
SFN-SFN difference	XXII SFN-SFN observed time difference type 1 as specified in chip X Note 4					
Propagati	n condition	_				
NOTE 1: Io level has been calculated from other parameters for information purposes. It is not a settable parameter itself. *) For the UE which supports both Band III and Band IX operating frequencies, the measurement						
NOTE 2: NOTE 3:	 performance requirements for Band III shall apply to the multi-band UE. NOTE 2: The condition is -9270 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies. NOTE 3: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies. 					
NOTE4:	For example, x= 4915 specified in TS 25.215	20 or 9830399. This is [22].	s a calculated value	using the parameters	"OFF" and "Tm" as	
Tests sha 2 and 3 sh	II be done sequentially. nall be set within 5 secc	Test 1 shall be done onds so that UE does	tirst. After test 1 has not loose the Cell 2 i	been executed test p n between the tests.	arameters for tests	

Table 8.7.5.1.4: SFN-SFN observed time difference type 1 Intra frequency test parameters

The reported values for SFN-SFN observed time difference type 1 accuracy shall meet the requirements in table 8.7.5.1.5.

Table 8.7.5.1.5: SFN-SFN observed time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	$T1_SFN-SFN_TIME_(X-2)$	$T1_SFN-SFN_TIME_(X-2)$	$T1_SFN-SFN_TIME_(X-2)$			
Highest reported value	T1_SFN-SFN_TIME_(X+2)	T1_SFN-SFN_TIME_(X+2)	$T1_SFN-SFN_TIME_(X+2)$			
T1_SFN-SFN_TIME_(X) is the reporting value corresponding to SFN-SFN observed time difference type 1 measured						
by system simulator						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.5.2 SFN-SFN observed time difference type 2 without IPDL period active

NOTE: This test case is not complete and there are currently no plans to complete it.

8.7.5.2.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE supporting this measurement.

8.7.5.2.2 Minimum requirements

The accuracy requirement in table 8.7.5.2.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114$ dBm for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113$ dBm for Band IX,

CPICH_RSCP1,2 $|_{dBm} \ge -112$ dBm for Bands II, V and VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Table 8.7.5.2.1: SFN-SFN observed time difference type 2 measurement accuracy

					Condi	tions	
		Δοουταογ			lo [dBm/3	.84 MHz]	
Parameter	Unit	[chip]	Band I, IV, VI, X, XI, XIX and XXI	Band IX	Band II, V and VII	Band XXV	Band III, VIII, XII, XIII, XIV, XX and XXII
SFN-SFN observed time difference type1	chip	± 0.5	-9450	-9350	-9250	-90.550	-9150
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894							
MHz for the UE which supports both Band V and Band XXVI operating frequencies.							

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.2.1.

8.7.5.2.3 Test purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 2 measurement accuracy without IPDL period active is within the limits specified in clause 8.7.5.2.2.

During the test the time difference between Cell 1 and 2 can be set to value from -1279.75 to 1280 chips.

In this case all cells are in the same frequency. Table 8.7.5.2.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.5.2.2: SFN-	SFN observed time	difference type	2 Intra frequence	cy test parameters
				· · ·

Pa	arameter	Unit	Cell 1	Cell 2	
UTRARFO	Channel number		Channel 1	Channel 1	
CPICH_Ec	:/lor	dB	-10	-10	
PCCPCH_	Ec/lor	dB	-12	-12	
SCH_Ec/lo	or	dB	-12	-12	
PICH_Ec/lo	or	dB	-15	-15	
DPCH_Ec/	/lor	dB	-15	-15	
OCNS		dB	-1.11	-1.11	
Îor/loc		dB	10.5	10.5	
loc		dBm/3.84 MHz	lo -13.7 dB = loc, Note 1	lo -13.7 dB = loc, Note 1	
CPICH_Ec	lo, Note 4	dB	-13.2	-13.2	
Range 1			-9470 (Band I, IV, VI, X, XI, XIX, XXI) -9370 (Band IX*) -9270 (Band II, V, VII) -90.5 -70 (Band XXV XXVI)	9470 (Band I, IV, VI, X, XI, XIX, XXI) -9370 (Band IX*) -9270 (Band II, V, VII) -90.5 -70 (Band XXV)	
	lo	dBm/3.84 MHz	(Note 2)) -9170 (Band III, VIII, XII, XIII, XIV, XX, XXII)	200.070 (Dand XXV) XXVI (Note 2)) -9170 (Band III, VIII, XII, XIII, XIV, XX, XXII)	
Range 2			-9450 (Band I, IV, VI, X, XI, XIX, XXI) -9350 (Band IX*) -9250 (Band II, V, VII,) -90.550 (Band XXV, XXVI (Note 3)) -9150 (Band III, VIII, XII, XIII, XIV, XX, XXII)	-9450 (Band I, IV, VI, X, XI, XIX, XXI) -9350 (Band IX*) -9250 (Band II, V, VII) -90.550 (Band XXV, XXVI (Note 3)) -9150 (Band III, VIII, XII, XIII, XIV, XX, XXII)	
Propagatio	n condition	-	AWO	GN	
 NOTE 1: <i>loc</i> level shall be adjusted according the total signal power spectral density <i>lo</i> at receiver input and the geometry factor <i>lor/loc</i>. *) For the UE which supports both Band III and Band IX operating frequencies, the measurement for Dend III and Band IX operating frequencies. 					
NOTE 2: The condition is -9270 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.					
NOTE 3:	NOTE 3: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.				
NOTE 4:	lo and CPICH Ec/lo They are not settabl	NOTE 4: Io and CPICH Ec/lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.			

8.7.5.3 SFN-SFN observed time difference type 2 with IPDL period active

Note: This test case is not complete and there are currently no plans to complete it.

8.7.5.3.1 Definition and applicability

This measurement is specified in clause 5.1.9 of TS 25.215 [22]. The reference point for the SFN-SFN observed time difference type 2 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA for the FDD UE supporting IPDL measurements.

8.7.5.3.2 Minimum requirements

The accuracy requirement in table 8.7.5.3.1 is valid under the following conditions:

CPICH_RSCP1,2 $|_{dBm} \ge -114 \text{ dBm}$ for Bands I, IV, VI, X, XI XIX and XXI,

CPICH_RSCP1,2 $|_{dBm} \ge -113 \text{ dBm}$ for Band IX,

CPICH_RSCP1,2 $|_{dBm} \ge -112$ dBm for Bands II, V and VII,

CPICH_RSCP1,2|_{dBm}≥ -111 dBm for Band III, VIII, XII, XIII, XIV, XX and XXII,

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CPICH_RSCP1,2 $|_{dBm} \ge -110.5$ dBm for Band XXV and XXVI. (NOTE 1)

NOTE 1: The condition is -112 dBm when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies.

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\Big|_{in\ dB} \le 20dB$$

Additionally the accuracy requirement in table 8.7.5.3.1 is also valid for neighbour cells for which the following conditions apply to during idle periods provided idle periods have a length of 1 slot:

CPICH_RSCPx,y $|_{dBm} \ge -114 \text{ dBm}.$

$$\frac{I_{o_idle_period}}{\left(\hat{I}_{or}\right)}\bigg|_{in\ dB} - \left(\frac{CPICH_E_c}{I_{or}}\right)\bigg|_{in\ dB} \le 20dB\,,$$

where x and y represent cells measured using idle periods and $I_{o_{idle-period}}$ is the total received power during the idle period.

NOTE: Additional general conditions are needed for the requirements in table 8.7.5.3.1 to be valid.

Table 8.7.5.3.1: SFN-SFN observed time difference type 2 measurement accuracy

					Condit	ions	
		Δορικαργ			lo [dBm/3.	84 MHz]	
Parameter	Unit	[chin]	Band I, IV,	Band IX	Band II, V	Band XXV	Band III, VIII,
		[ciiib]	VI, X, XI, XIX		and VII	and XXVI	XII, XIII, XIV,
			and XXI				XX and XXII
SFN-SFN observed time	chin	+05	-94 -50	-93 -50	-92 -50	-90.550	-91 -50
difference type1	Cilip	± 0.5	-3430	-3000	-3230	(Note 1)	-3130
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894							
MHz for the UE which supports both Band V and Band XXVI operating frequencies.							

The normative reference for this requirement is TS 25.133 [2] clause 9.1.8.2.2.

8.7.5.3.3 Test purpose and Environment

The purpose of this test is to verify that the SFN-SFN observed time difference type 2 measurement accuracy without IPDL period active is within the limits specified in clause 8.7.5.2.2.

During the test the time difference between Cell 1 and 2 shall be set according to the assistance data defined in table 8.7.5.3.3.

In this case all cells are in the same frequency. Table 8.7.5.3.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

|--|

Parameter	Unit	Ce	1	Ce	2
Timo		No idle	Idle period in	No idle	Idle period in
lille		period	Cell 1	period	Cell 1
UTRA RF Channel number		Channel 1	Channel 1	Channel 1	Channel 1
CPICH_Ec/lor	dB	-10	-10	-10	-10
PCCPCH_Ec/lor	dB	-12	-12	-12	-12
SCH_Ec/lor	dB	-12	-12	-12	-12
PICH_Ec/lor	dB	-15	-15	-15	-15
DPCH_Ec/lor	dB	-15	-15	-	-
OCNS	dB	-1.11	-1.11	-0.94	-0.94
Ĩor/loc	dB	10.5	-24.5	-6	-6
loc	dBm/3.84 MHz		-8	0	
lo, Note 1	dBm/3.84 MHz	-69.04	-79.01	-69.04	-79.01
CPICH_Ec/lo, Note 1	dB	-10.46	-35.49	-26.96	-16.99

Parameter	Unit	Cell 1	Cell 2	
Propagation condition -		AWGN		
NOTE 1: Io and CPICH Ec/lo levels have been calculated from other parameters for information purposes.				
They are not settable parameters themselves.				

When verifying the SFN-SFN observed time difference type 2 intra frequency measurement accuracy with IPDL period active the idle period parameters in table 8.7.5.3.3 shall be used.

Table 8.7.5.3.3: SFN-SFN observed time difference type 2 Intra frequency test parameters

Parameter	Unit	Cell 1
Search Window Size	Chips	80
IP_Status	-	Continuous
IP_Spacing	Frames	10
IP_Lenght	Symbols	10
IP_Offset	frame	NA
Seed	integer	13
Burst_Start		NA
Burst_Length		NA
Burst_Freq		NA

8.7.6 UE Rx-Tx time difference

8.7.6.1 UE Rx-Tx time difference type 1 (Release 5 and earlier)

8.7.6.1.1 Definition and applicability

The UE Rx-Tx time difference is defined as the time difference between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time) of the downlink DPCH frame from the measured radio link. The reference point of the UE Rx-Tx time difference shall be the antenna connector of the UE. This measurement is specified in clause 5.1.10 of TS 25.215.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 5 and earlier releases.

8.7.6.1.2 Minimum requirements

Table 8.7.6.1.1: UE Rx-Tx time difference type 1 measurement accuracy

					Condi	tions	
		Δοριπαργ			lo [dBm/3	3.84MHz]	
Parameter	Unit	[chin]	Band I, IV, VI,	Band IX	Band II, V and	Band XXV and	Band III, VIII,
		[cimb]	X, XI, XIX and		VII	XXVI	XII, XIII, XIV, XX
			XXI				and XXII
UE RX-TX time	chin	+ 1 5	-94 -50	-93 -50	-92 -50	-90.550	-91 -50
difference	omp	± 1.5	04 00	00 00	52 00	(Note 1)	0100
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the							
UE which supports both Band V and Band XXVI operating frequencies.							

The normative reference for this requirement is TS 25.133 [2] clause 9.1.9.1.1 and A.9.1.6.1.2.

8.7.6.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of Rx-Tx time difference is within the limit specified in clause 8.7.6.1.2. This measurement is used for call setup purposes to compensate propagation delay of DL and UL.

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8.7.6.1.4 Method of test

8.7.6.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1

Table 8.7.6.1.2: UE Rx-Tx time difference type 1 intra frequency test parameters

Parameter		l Init	Test 1	Test 2	Test 3
		Unit	Cell 1	Cell 1	Cell 1
UTRA RF Channel number			Channel 1	Channel 1	Channel 1
CPICH_E	c/lor	dB	-10	-10	-10
PCCPCH	_Ec/lor	dB	-12	-12	-12
SCH_Ec/	lor	dB	-12	-12	-12
PICH_Ec	/lor	dB	-15	-15	-15
DPCH_E	c/lor	dB	-15	-15	-15
OCNS_E	c/lor	dB	-1.11	-1.11	-1.11
Ïor/loc		dB	10.5	10.5	10.5
loc		dBm/3.84 MHz	lo - 10.9 dB = loc,	lo - 10.9 dB = loc,	lo - 10.9 dB = loc,
100			Note 1	Note 1	Note 1
	Band I, IV, VI, X, XI, XIX, XXI		-94		
	Band IX*		-93		
10	Band II, V, VII	dBm/3.84 MHz	-92	-72	-50
Band XXV, XXVI			-90.5 (Note 2)	-12	-50
	Band III, VIII, XII,				
	XIII, XIV, XX,		-91		
	XXII				
Propagati	on condition	-	AWGN	AWGN	AWGN
NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the					
	geometry factor <i>lor/loc</i> .				
*) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance					
requirements for Band III shall apply to the multi-band UE.					
NOTE 2:	The condition is -92	50 dBm/3.84 MHzw	hen the carrier freque	ncy of the assigned U	TRA channel is
1	within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies .				

8.7.6.1.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters are set up according to table 8.7.6.1.4 for Test 1.
- 2) SS shall transmit MEASUREMENT CONTROL message.
- 3) UE shall transmit periodically MEASUREMENT REPORT message.
- 4) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 5) The RF parameters are set up according table 8.7.6.1.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 6) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated until statistical significance according to Annex F.6.2.8 is achieved

- 7) The RF parameters are set up according table 8.7.6.1.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 8) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The comparison should be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 9) SS shall transmit RRC CONNECTION RELEASE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message for Intra frequency measurement (Ste	эр 2	<u>2)</u> :	:
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Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-KKC message sequence number	internal counter.
Measurement Information elements	
-Measurement Identity	5
-Measurement Command	SETUP
- Additional measurements list	Not Present
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-Measurement quantity	UE Rx-Tx time difference
-Filter coefficient	0
-UE Internal reporting quantity	
-UE Transmitted power	FALSE
-CHOICE mode	FDD
-UE Rx-Tx time difference	TRUE
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message

Information Element	Value/remark				
Message Type					
Integrity check info	The presence of this IE is dependent on IXIT statements in				
	TS 34.123-2. If integrity protection is indicated to be				
	active, this IE shall be present with the values of the sub				
	IEs as stated below. Else, this IE and the sub-IEs shall be				
	absent.				
 Message authentication code 	This IE is checked to see if it is present. The value is				
	compared against the XMAC-I value computed by SS.				
- RRC Message sequence number	This IE is checked to see if it is present. The value is used				
	by SS to compute the XMAC-I value.				
Measurement identity	5				
Measured Results					
- CHOICE Measurement	UE Internal measured results				
- Choice mode	FDD				
- UE Transmitted power	Checked that this IE is absent				
- UE R x-T x report entries					
- Primary CPICH info	Checked that this IE is present				
- Primary scrambling code	100				
- UE Rx-Tx time difference type 1	Checked that this IE is present				
Measured results on RACH	Checked that this IE is absent				
Additional measured results	Checked that this IE is absent				
Event results	Checked that this IE is absent				

8.7.6.1.5 Test requirements

Table 8.7.6.1.3 UE Rx-Tx time difference type 1 measurement accuracy

		Accuracy			Conditions				
				lo [dBm/3.84MHz]					
Parameter	Unit	[chin]	Band I, IV, VI,	Band IX	Band II, V and	Band XXV and	Band III, VIII,		
		[emp]	X, XI, XIX and		VII	XXVI	XII, XIII, XIV,		
			XXI				XX and XXII		
UE RX-TX time	chin	+ 2 0	-9450	-9350	-9250	-90.550	-9150		
difference	cnip	± 2.0				(Note 1)			
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for									
the UE which s	the UE which supports both Band V and Band XXVI operating frequencies.								

Table 8.7.6.1.4: UE Rx-Tx time difference type 1 intra frequency test parameters

Parameter		Unit	Test 1	Test 2	Test 3	
		UIIL	Cell 1	Cell 1	Cell 1	
UTRA RF Cha	nnel number		Channel 1	Channel 1	Channel 1	
CPICH_Ec/lor		dB	-10	-10	-10	
PCCPCH_Ec/	lor	dB	-12	-12	-12	
SCH_Ec/lor		dB	-12	-12	-12	
PICH_Ec/lor		dB	-15	-15	-15	
DPCH_Ec/lor		dB -15		-15	-15	
OCNS_Ec/lor		dB	-1.11	-1.11	-1.11	
lor/loc		dB	10.5	10.5	10.5	
	Band I, IV, VI, X, XI, XIX, XXI		-103.6			
	Band IX*		-102.6			
loc	Band II, V, VII	dBm/3.84 MHz	-101.6	-82.0	-62.2	
100	Band XXV, XXVI		-100.1 (Note 2)	-02.5	-02.2	
	Band III, VIII, XII, XIII, XIV, XX, XXII		-100.6			

	Daramotor	Unit	Test 1	Test 2	Test 3	
	raiametei	Onit	Cell 1	Cell 1	Cell 1	
	Band I, IV, VI, X, XI, XIX, XXI		-92.7			
	Band IX*		-91.7			
	Band II, V, VII	dBm/2.94 MHz	-90.7	70	51.2	
10	Band XXV, XXVI		-89.2 (Note 2)	-12	-01.0	
	Band III, VIII, XII, XIII, XIV, XX, XXII		-89.7			
Propagation condition		-	AWGN	AWGN	AWGN	
NOTE 1:	loc level shall be adjuste	ed according the tot	al signal power spectra	al density <i>Io</i> at receive	er input and the	
9	geometry factor <i>Îor/loc</i> .					
*)	For the UE which suppo	orts both Band III an	d Band IX operating fr	equencies, the measu	rement performance	
1	requirements for Band III shall apply to the multi-band UE.					
NOTE 2:	The condition is -925	50 dBm/3.84 MHz wi	hen the carrier frequer	ncy of the assigned U	TRA channel is within	
8	369-894 MHZ for the UE	which supports bo	th Band V and Band X	XVI operating frequer	ncies.	

The reported values for UE Rx-Tx time difference accuracy shall meet the requirements in table 8.7.6.1.5.

Table 8.7.6.1.5: UE Tx-Rx time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3			
Lowest reported value	$RX-TX_TIME_(X-2)$	$RX-TX_TIME_(X-2)$	$RX-TX_TIME_(X-2)$			
Highest reported value	RX-TX_TIME_(X + 2)	RX-TX_TIME_(X + 2)	RX-TX_TIME_(X + 2)			
RX-TX_TIME_(X) is the reporting value corresponding to UE Rx-Tx time difference measured by system simulator						

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.6.1A UE Rx-Tx time difference type 1 (Release 6 and later)

8.7.6.1A.1 Definition and applicability

The UE Rx-Tx time difference is defined as the time difference between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time) of the downlink DPCH frame from the measured radio link. The reference point of the UE Rx-Tx time difference shall be the antenna connector of the UE. This measurement is specified in clause 5.1.10 of TS 25.215.

The connection is started using Cell 1, and then Cell 2 is added to the active set so that Cell 1 is the timing reference. During the test the downlink DPCH time difference between Cell 1 and Cell 2 can be set to any value from -148 to +148 chips.

The requirements and this test apply to all types of UTRA for the FDD UE for Release 6 and later releases.

8.7.6.1A.2 Minimum requirements

Table 8.7.6.1A.1: UE Rx-Tx time difference type 1 measurement accurate	су
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					Conditions					
		Δοριπαργ			lo [dBm/3	8.84MHz]				
Parameter	Unit	[chip]	Band I, IV, VI,	Band IX	Band II, V and	Band XXV and	Band III, VIII,			
		[X, XI, XIX and		VII	XXVI	XII, XIII, XIV, XX			
			XXI				and XXII			
UE RX-TX time difference	chip	± 1.5	-9450	-9350	-9250	-90.550 (Note 1)	-9150			
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the										
UE which sup	ports bo	th Band V and B	and XXVI operatin	g frequencies.						

The normative reference for this requirement is TS 25.133 [2] clause 9.1.9.1.1 and A.9.1.6.1.2.

8.7.6.1A.3 Test purpose

The purpose of this test is to verify that the measurement accuracy measured for Cell 2 of Rx-Tx time difference is within the limit specified in clause 8.7.6.1A.2. This measurement is used for call setup purposes to compensate propagation delay of DL and UL.

8.7.6.1A.4 Method of test

8.7.6.1A.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect SS to the UE antenna connector as shown in figure A.1

Table 8.7.6.1A.2: UE Rx-Tx time difference type 1 intra frequency test parameters

Deveryoter		l linit	Tes	t 1	Tes	Test 2		Test 3	
	Parameter	Unit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2	
UTRARF	Channel number		Channel 1		Channel 1		Chan	Channel 1	
			Timing		Timing		Timing		
Downlink I	DPCH timing	Chips	Referenc	Note 2	Referenc	Note 2	Referenc	Note 2	
			е		е		е		
CPICH_E	c/lor	dB	-1	0	-1	0	-1	0	
PCCPCH_	_Ec/lor	dB	-1	2	-1	2	-1	2	
SCH_Ec/lo	or	dB	-1	2	-1	2	-1	2	
PICH_Ec/I	or	dB	-1	5	-1	5	-1	5	
DPCH_Ec	:/lor	dB	-1	5	-1	5	-1	5	
OCNS_Ec	:/lor	dB	-1.1	11	-1.1	11	-1.1	11	
Îor/loc		dB	10	.5	10	10.5 10.5		.5	
loc		dBm/384MHz	lo –13.7 d	lo - 13.7 dB = loc,		lo –13.7 dB = loc,		Io -13.7 dB = Ioc,	
100			Note 1		Note 1		Note 1		
	Band I, IV, VI, X, XI, XIX, XXI		-94 -93 -92 -90.5 (Note 3)		-				
	Band IX*								
	Band II, V, VII	dDm /2 04 MLI-7			7	70		50	
10	Band XXV, XXVI	UDI11/3.04 WI 12			-12		-50		
	Band III, VIII, XII,								
	XIII, XIV, XX,		-9	1					
	XXII								
Propagatio	on condition	-	AWO	GN	AW	GN	AWO	GN	
NOTE 1:	loc level shall be adjust	ed according the to	tal signal po	owerspect	ral density <i>I</i>	o at receiv	er input and	l the	
	geometry factor <i>lor/loc</i> .								
*)	*) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance								
requirements for Band III shall apply to the multi-band UE.									
NOTE 2:	From reference timing -	148 to reterence tin	ning +148		C (1				
NOTE 3:	The condition is -92	ou dBm/3.84 MHz w the UE which supp	nen the cal orts both B	rrier freque and V and	ency of the a Band XXVI	ssigned U operating	IRA channe frequencies	el is	

8.7.6.1A.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters are set up according to table 8.7.6.1A.4 for Test 1.
- 2) SS shall send an ACTIVE SET UPDATE message with activation time "now", adding cell 2 to the active set.
- 3) SS shall transmit MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT message.
- 5) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The "UE Rx-Tx time difference type 1" measurement is measured for Cell 2. The comparison should be repeated until statistical significance according to Annex F.6.2.8 is achieved.

- 6) The RF parameters are set up according table 8.7.6.1A.4 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 7) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The "UE Rx-Tx time difference type 1" measurement is measured for Cell 2. The comparison should be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 8) The RF parameters are set up according table 8.7.6.1A.4 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period.
- 9) SS shall check "UE Rx-Tx time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to actual UE Rx-Tx time difference value for each MEASUREMENT REPORT message. The "UE Rx-Tx time difference type 1" measurement is measured for Cell 2. The comparison should be repeated until statistical significance according to Annex F.6.2.8 is achieved.
- 10) SS shall transmit RRC CONNECTION RELEASE message.
- 11) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.
- NOTE 1: Only one value from -148 to +148 chips need to be set during the test for the downlink DPCH time difference between Cell 1 and Cell 2.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL	message for Intra fr	requency measurement	(Step 2)	:
	0		· · /	

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its internal counter.
Measurement Information elements	
-Measurement Identity	5
-Measurement Command	SETUP
- Additional measurements list	Not Present
-Measurement Reporting Mode	
-Measurement Report Transfer Mode	AMRLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-CHOICE Measurement type	UE Internal measurement
-UE Internal measurement quantity	
-CHOICE mode	FDD
-Measurement quantity	UE Rx-Tx time difference
-Filter coefficient	0
-UE Internal reporting quantity	
-UE Transmitted power	FALSE
-CHOICE mode	FDD
-UE Rx-Tx time difference	TRUE
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	250
Physical channel information elements	
-DPCH compressed mode status info	Not Present

MEASUREMENT REPORT message

Information Element	Value/remark
Message Type	
Integrity check info	The presence of this IE is dependent on IXIT statements in
	TS 34.123-2. If integrity protection is indicated to be
	active, this IE shall be present with the values of the sub
	IEs as stated below. Else, this IE and the sub-IEs shall be
	absent.
 Message authentication code 	This IE is checked to see if it is present. The value is
	compared against the XMAC-I value computed by SS.
- RRC Message sequence number	This IE is checked to see if it is present. The value is used
	by SS to compute the XMAC-I value.
Measurement identity	5
Measured Results	
- CHOICE Measurement	UE Internal measured results
- Choice mode	FDD
- UE Transmitted power	Checked that this IE is absent
- UE R x-T x report entries	
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	100
- UE R x-T x time difference type 1	Checked that this IE is present
- UE R x-T x report entries	
- Primary CPICH info	Checked that this IE is present
- Primary scrambling code	150
- UE R x-T x time difference type 1	Checked that this IE is present
Measured results on RACH	Checked that this IE is absent
Additional measured results	Checked that this IE is absent
Event results	Checked that this IE is absent

8.7.6.1A.5 Test requirements

Table 8.7.6.1A.3: UE Rx-Tx time difference type 1 measurement accuracy

				Conditions				
		Δοομιταον						
Parameter	Unit	[chin]	Band I, IV, VI,	Band IX	Band II, V and	Band XXV and	Band III, VIII,	
		[cillb]	X, XI, XIX and		VII	XXVI	XII, XIII, XIV,	
			XXI				XX and XXII	
UE RX-TX time	chin	+ 2 0	-9450	-9350	-9250	-90.550	-9150	
difference	unp	\pm 2.0				(Note 1)		
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for								
the UE which supports bo	th Band V	and Band XXVI	operating frequence	cies.				

Table 8.7.6.1A.4: UE Rx-Tx time difference type 1 intra frequency test parameters

Baramotor	Unit	Test 1		Test 2		Test 3	
Farameter	Onit	Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
UTRA RF Channel number		Chan	nel 1	el 1 Channel 1		Channel 1	
		Timing		Timing		Timing	
Downlink DPCH timing	Chips	Referenc	Note 2	Referenc	Note 2	Referenc	Note 2
		е		е		е	
CPICH_Ec/lor	dB	-1	-10		-10		0
PCCPCH_Ec/lor	dB	-1	2	-1	2	-1	2
SCH_Ec/lor	dB	-1	2	-12		-1	2
PICH_Ec/lor	dB	-1	5	-1	-15		5
DPCH_Ec/lor	dB	-15		-15 -15		-1	5
OCNS_Ec/lor	dB	-1.11		-1.1	11	-1.1	11
Ïor/loc	dB	10	.8	10	.8	10	.8

	Paramotor	Linit	Tes	st 1	Tes	Test 2		Test 3	
	Falameter	Onic	Cell 1 Cell 2		Cell 1	Cell 2	Cell 1	Cell 2	
	Band I, IV, VI, X, XI, XIX, XXI		-106.7						
	Band IX*		-1()5.7					
loc	Band II, V, VII	dBm/2.84 MHz	-1()4.7	。 。	57	64	5.2	
100	Band XXV, XXVI		-103.2	(Note 3)	-0	5.7	-00	5.5	
	Band III, VIII, XII,			0.7					
	XIII, XIV, XX, XXII		-10)3.7					
	Band I, IV, VI, X,		0	0 7					
	XI, XIX, XXI		-92.1						
	Band IX*		-9	1.7	-71.7		-51.3		
10	Band II, V, VII	dBm/2 84 MHz	-9	0.7					
10	Band XXV, XXVI		-89.2 (Note 3)					
	Band III, VIII, XII,								
	XIII, XIV, XX,		-8	9.7					
	XXII								
Propagati	ion condition	-	AW	GN	AW	'GN	AW	GN	
NOTE 1:	loc level shall be adjust	ed according the tot	alsignalp	owerspectr	al density	lo at receive	er input and	d the	
	geometry factor Ior/Ioc.								
*)	For the UE which suppo	e UE which supports both Band III and Band IX operating frequencies, the measurement performance						rformance	
	requirements for Band III shall apply to the multi-band UE.								
NOTE 2:	NOTE 2: From reference timing -148 to reference timing +148.								
NOTE 3:	The condition is -925	50 dBm/3.84 MHz w	hen the ca	rrier freque	ncy of the a	assigned U	FRA chann	el is within	
	869-894 MHz for the UE	Ewhich supports bo	th Band V	and Band >	⟨XVI opera	ting frequer	ncies.		

The reported values for UE Rx-Tx time difference accuracy shall meet the requirements in table 8.7.6.1A.5.

Table 8.7.6.1A.5: UE Tx-Rx time difference type 1 measurement accuracy requirements for the reported values

	Test 1	Test 2	Test 3		
Lowest reported value	$RX-TX_TIME_(X-2)$	$RX-TX_TIME_(X-2)$	$RX-TX_TIME_(X-2)$		
Highest reported value	$RX-TX_TIME_(X+2)$	$RX-TX_TIME_(X + 2)$	$RX-TX_TIME_(X+2)$		
RX-TX TIME (X) is the reporting value corresponding to UE Rx-Tx time difference measured by system simulator					

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.6.2 UE Rx-Tx time difference type 2

NOTE: This test case is not complete and there are currently no plans to complete it.

8.7.6.2.1 Definition and applicability

The UE Rx-Tx time difference is defined as the time difference between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time) of the downlink DPCH frame from the measured radio link. The reference point of the UE Rx-Tx time difference shall be the antenna connector of the UE. This measurement is specified in clause 5.1.10 of TS 25.215.

The requirements and this test apply to all types of UTRA for the FDD UE supporting this measurement.

8.7.6.2.2 Minimum requirements

Table 8.7.6.2.1: UE Rx-Tx time difference type 2 measurement accuracy

					Conditions					
		Acourcov			lo [dBm/3.84MHz]					
Parameter	Unit	[chin]	Band I, IV,	Band IX	Band II, V	Band XXV	Band III, VIII,			
		[oub]	VI, X, XI, XIX		and VII	and XXVI	XII, XIII, XIV,			
			and XXI				XX and XXII			
LIE RX-TX time difference	chin	+10	-9450	-9350	-9250	-90.550	-9150			
	Chip	± 1.0				(Note 1)				
NOTE 1: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz										
for the UE which supports both Band V and Band XXVI operating frequencies.										

The normative reference for this requirement is TS 25.133 [2] clause 9.1.9.2.1.

8.7.6.2.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of Rx-Tx time difference type 2 is within the limit specified in clause 8.7.6.2.2.

The connection is started using cell 1, then cell 2 is added to the active set so that cell 1 is the timing reference. During the test the downlink DPCH time difference between Cell 1 and 2 can be set to any value from -148 to 148 chips.

Table 8.7.6.2.2 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table 8.7.6.2.2: UE Rx-Tx time difference type 2 measurement parameters

Parameter	Unit	Cell 1	Cell 2		
UTRARF Channel number		Channel 1	Channel 1		
Downlink DPCH timing	Chips	Timing reference	From reference timing –148		
_			to reference timing+148		
CPICH_Ec/lor	dB	-10	-10		
PCCPCH_Ec/lor	dB	-12	-12		
SCH_Ec/lor	dB	-12	-12		
PICH_Ec/lor	dB	-15	-15		
DPCH_Ec/lor	dB	-15	-15		
OCNS	dB	-1.11	-1.11		
Îor/loc	dB	10.5	10.5		
loc dBm/ 3.84 MHz		lo -10.9 dB = loc, Note 1	lo-13.7 dB = loc, Note 1		
lo	dBm/3.84 MHz	-9450 (Band I, IV, VI, X, XI, XIX, XXI) -9350 (Band IX*) -9250 (Band II, V, VII) -90.550 (Band XXV, XXVI (Note 2)) -9150 (Band III, VIII, XII, XIII, XIV, XX, XXII)	-9450 (Band I, IV, VI, X, XI, XIX, XXI) -9350 (Band IX*) -9250 (Band II, V, VII) -90.550 (Band XXV, XXVI (Note 2)) -9150 (Band III, VIII, XII, XIII, XIV, XX, XXII)		
Propagation condition	-	AWGN			
NOTE 1: loc level shall be a geometry factor Îor	NOTE 1: loc level shall be adjusted according the total signal power spectral density lo at receiver input and the geometry factor lor/loc.				
*) For the UE which supports both Band III and Band IX operating frequencies, the measurement performance requirements for Band III shall apply to the multi-band UE.					
OTE 2: The condition is -9250 dBm/3.84 MHz when the carrier frequency of the assigned UTRA channel is within 869-894 MHz for the UE which supports both Band V and Band XXVI operating frequencies					

8.7.7 Observed time difference to GSM cell (R99 and Rel-4 only)

Void

8.7.8 P-CCPCH RSCP

8.7.8.1 Absolute measurement accuracy

8.7.8.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured in an UTRA TDD cell on one frequency compared to the actual P-CCPCH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA FDD and UTRA TDD for Release 99 and Release 4 only.

8.7.8.1.2 Minimum Requirements

8.7.8.1.2.1 3.84Mcps TDD option

The accuracy requirement in table 8.7.8.1.1 is valid under the following conditions:

P-CCPCH_RSCP \geq -102 dBm,

$$\frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB} - \left(\frac{P - CCPCH \ E_c}{I_{or}}\right)\Big|_{in\ dB} \le 8dB$$

Table 8.7.8.1.1: P-CCPCH RSCP inter frequency absolute accuracy

		Accura	Conditions	
Parameter	Unit	Normal conditions	Extreme conditions	lo [dBm/3.84 MHz]
P-CCPCH RSCP	dBm	± 6	± 9	-9470
	dBm	± 8	± 11	-7050

8.7.8.1.2.2 1.28Mcps TDD option

The accuracy requirement in table 9.31A is valid under the following conditions:

P-CCPCH RSCP \geq -102 dBm

P-CCPCH Ec/Io \geq -8 dB

Table 8.7.8.1.1A: P-CCPCH RSCP inter frequency absolute accuracy

			Accuracy [dB]			
Parameter	Unit	Normal conditions	Extreme conditions	lo [dBm/1.28 MHz]		
P-CCPCH RSCP	dBm	± 6	± 9	-9470		
F-CCFCII_KSCF	dBm	± 8	± 11	-7050		

The normative reference for this requirement is TS 25.133 [2] clauses 9.1.11.1 and A.9.1.8.

8.7.8.1.3 Test purpose

The purpose of this test is to verify that the P-CCPCH RSCP absolute measurement accuracy is within the specified limits.

1005

8.7.8.1.4 Method of test

8.7.8.1.4.1 Initial conditions

8.7.8.1.4.1.1 3.84Mcps TDD option

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 is a UTRA FDD cell and cell 2 is a 3.84Mcps TDD cell. The second Beacon timeslot shall be provided for cell 2 in timeslot 8. Compressed mode as specified in TS 25.101 [1] section A.5, set 3 of table A.22, is applied. TGPRC and TGCFN shall be set to "Infinity" and "(Current CFN + (256 – TTI/10msec)) mod 256". P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table 8.7.8.1.2.

Table 8.7.8.1.2: P-CCPCH RSCP inter frequency tests parameters

Parameter	Unit	Tes	st 1	Te	Test 2		
Falameter	Offic	Cell 1	Cell 2	Cell 1	Cell 2		
DL timeslot number		n.a.	0 8	n.a.	0 8		
UTRARF Channel number		Channel 2	Channel 1	Channel 2	Channel 1		
CPICH_Ec/lor	dB	-10	n.a.	-10	n.a.		
P-CCPCH_Ec/lor	dB	-12	-3 n.a.	12	-3 n.a		
SCH_Ec/lor	dB	-12	-9	-12	-9		
SCH_t _{offset}		n.a.	5	n.a.	5		
PICH_Ec/lor	dB	-15	n.a3	-15	n.a3		
DPCH_Ec/lor	dB	-15	n.a15		n.a.		
OCNS_Ec/lor	dB	-1.11	-3.12	-1.11	-3.12		
loc	dBm/3.84 MHz	-60	-57.7	-84	-84.7		
Ïor/loc	dB	9.54	7	0	3		
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7 n.a.	. n.a.	-84.7 n.a.		
CPICH RSCP, Note 1	dBm	-60.46	n.a.	-94	n.a.		
lo, Note 1	dBm/3.84 MHz	-50	-50 -81		-80		
Propagation condition - AWGN AWGN							
NOTE 1: P-CCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.

Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.

8.7.8.1.4.1.2 1.28Mcps TDD option

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 is a UTRA FDD cell and cell 2 is a 1.28McpsTDD cell. The second Beacon timeslot shall be provided for cell 2 in timeslot 2. Compressed mode as specified in TS 25.101 [1] section A.5, set 3 of table A.22, is applied. TGPRC and TGCFN shall be set to "Infinity" and "(Current CFN + (256 – TTI/10msec)) mod 256". P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table 8.7.8.1.2A.

Baramotor	Unit	Tes	st 1		Test 2		
Farameter	Offic	Cell 1	Cell 2		Cell 1	Cell 1 Ce	
DL timeslot number		n.a.	0	DwPT s	n.a.	0	DwPT s
UTRA RF Channel number		Channel 2	Chan	nel 1	Channel 2	Chan	nel 1
CPICH_Ec/lor	dB	-10	n.	a.	-10	n.:	a.
P-CCPCH_Ec/lor	dB	-12	-3		-12	-3	
DwPCH _Ec/lor	dB	n.a.		0	n.a.		0
PICH_Ec/lor	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
DPCH_Ec/lor	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
OCNS_Ec/lor	dB	-1.11	-3		-1.11	-3	
loc		-60 dBm/ 3.84 MH z	-57 dBm/ M⊦	7.7 /1.28 Iz	-84 dBm/ 3.84 MHz	-84 dBm/ M⊢	1.7 /1.28 1z
Ïor/loc	dB	9.54	7	,	0	3	5
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7		n.a.	-84.7	
CPICH RSCP, Note 1	dBm	-60.46	n.	a.	-94	n.a	a.
lo Note 1		-50 dBm/ 3.84	-50 dBr	n/1.28	-81 dBm/	-80 dBr	n/1.28
		MHz	MH	lz	3.84 MHz	MH	lz
Propagation condition	- AWGN AWGN						
NOTE 1: P-CCPCH RSCP, CPICH RSCP and lo levels have been calculated from other parameters for							
information purposes. They are not settable parameters themselves.							
Tests shall be done sequentially	. Test 1 shall be	e done first. After	test 1 h	as been	executed, test	parame	ters for
test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.							

Table 8.7.8.1.2A: P-CCPCH RSCP inter frequency tests parameters

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.8.1.2.

8.7.8.1.4.2 Procedure

- 1) SS shall transmit the PHYSICAL CHANNEL RECONFIGURATION message.
- 2) UE shall transmit the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 3) SS shall transmit the MEASUREMENT CONTROL message.
- 4) UE shall transmit periodically MEASUREMENT REPORT messages.
- 5) SS shall check P-CCPCH RSCP values of Cell 2 in the MEASUREMENT REPORT messages. P-CCPCH RSCP power level of Cell 2 reported by the UE shall be compared to the actually set P-CCPCH RSCP value of Cell 2 for each MEASUREMENT REPORT message.
- 6) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Annex F.6.2.8 is achieved.
- 7) The RF parameters are set up according to table 8.7.8.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 4), 5) and 6) above are repeated.
- 8) The SS shall transmit RRC CONNECTION RELEASE message.
- 9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for inter frequency measurement (Step 1):

Information Element	Value/Remark	Revision
Message Type		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message	
	and writes to this IF. The first/leftmost bit of the bit	
	string contains the most significant bit of the MAC-I	
-RRC message sequence number	S provides the value of this IF from its internal	
-KKO message sequence number	counter	
Integrity protection mode info	Not Present	
Cinharing made info	Not Present	
-Cipnering mode into	Not Present	
	Not Present	
	Not Present	
-New C-RN11	Not Present	
-RRC State Indicator		
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info	Not Present	
Maximum allowed LIL TX nower	Not Procent	
	Not Present	
	Not Present	
	EDD	
-Downlink PDSCH Information	Not Present	R99 and Rel-4
Devention information according to a still service		only
-Downlink information common for all radio		
-Downlink DPCH into common for all RL	Not Present	
-CHOICE mode	FDD	
-DPCH compressed mode info		
-Transmission gap pattern sequence		
-TGPSI	1	
-TGPS Status Flag	Activate	
-TGCFN	(Current CFN + (256 – TTI/10msec))mod 256	
-Transmission gap pattern sequence		
configuration parameters		
-TGMP	TDD measurement	
-TGPRC	Infinity	
-TGSN	10	
-TGL1	10	
-TGL2	Not Present	
-TGD	UNDEFINED	
-TGPL1	11	
-TGPL2	Not Present	R99 and Rel-4
10122		only
-RPP	Mode 0	only
-ITP	Mode 0	
	III and D	
Downlink compress of mode method	Puncturing	
-Downlink compressed mode method		
Downlink frame type	A	
	0.0	
	3.0	
	INOT Present	
-DeltaSikatter2	INOT Present	
-IN Identify abort	Not Present	
-I Reconfirm abort	Not Present	
-TX Diversity Mode	Not Present	
-SSDT information	Not Present	R99 and Rel-4

Information Element	Value/Remark	Revision
	Not Prosont	only
-Downlink information per radio link list	NotFlesent	
-Downlink information for each radio link		
-Choice mode	FDD	
-Primary CPICH info		
-Primary scrambling code	100	
-PDSCH with SHO DCH Info	Not Present	R99 and Rel-4
-PDSCH code mapping	Not Present	011y R00 and Rel-4
- Door code mapping	Nothresent	only
-Downlink DPCH info for each RL		0
-CHOICE mode	FDD	
-Primary CPICH usage for channel	Primary CPICH may be used	
estimation		
-DPCH frame offset	Set to value Default DPCH Offset Value (as currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No code change	
-TPC combination index	0	
-SSDT Cell Identity	Not Present	R99 and Rel-4 only
 Closed loop timing adjustment mode 	Not Present	-
-SCCPCH Information for FACH	Not Present	

MEASUREMENT CONTROL message for inter frequency measurement (Step 3):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	
-message authentication code	SS calculates the value of MAC-I for this
	message and writes to this IE. The first/
	leftmost bit of the bit string contains the most
	significant bit of the MAC-I.
-RRC message sequence number	SS provides the value of this IE, from its
	internal counter.
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting	Periodical reporting
Mode	
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement	
-Inter-frequency cell info list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included.
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	
-CHOICE mode	
-Measurement quantity for frequency quality	Primary CCPCH RSCP
estimate	
-Inter-frequency reporting quantity	
-Frequency quality estimate	IRUE
-Non frequency related cell reporting quantities	

Information Element	Value/Remark
-Cell synchronisation information reporting	
indicator	FALSE
-Cell Identity reporting indicator	
-CHOICE mode	FALSE
-Timeslot ISCP reporting indicator	TDD
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	TRUE
-Reporting cell status	FALSE
-CHOICE reported cell	Report cells within monitored set on non-used
	frequency
-Maximum number of reported cells	2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.8.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.8.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.9 UE Transmission Power Headroom

8.7.9.1 Definition and applicability

The accuracy requirements for the UE transmission power headroom depends on the total power transmitted by the UE as defined in the functionality in section 9.2.5.3.2 of TS 25.321 [13], section 9.1.13.4 of TS 25.133 [2] and section 5.1.14 of TS 25.215 [22]. The requirements and this test apply to Release 6 and later releases for all types of UTRA for the FDD UE that support E-DCH and HSDPA.

8.7.9.2 Minimum Requirements

The UE transmission power headroom (UPH) is defined in section 5.1.14 of TS 25.215 [22] as the ratio of the maximum UE transmission power and the corresponding DPCCH code power, and shall be calculated as following:

$$UPH = P_{\max,tx} / P_{DPCCH}$$

where:

Pmax,tx = min {Maximum allowed UL TX Power, Pmax} is the UE maximum transmission power;

Maximum allowed UL TX Power is set by UTRAN and defined in [8];

Pmax is the UE nominal maximum output power according to the UE power class and specified in [1] table 6.1;

PDPCCH is the transmitted code power on DPCCH.

The accuracy requirements for UE transmission power headroom depends on the total power transmitted by the UE. Table 8.7.9.1 defines the accuracy of the measured quantity as defined in section 9.1.13.4 of TS 25.133 [2].

Total UE output power value (dBm)	1)		
25<= total output power <34	note 2		
24<= total output power <25	±2.0		
23<= total output power <24	±2.0		
22<= total output power <23	±2.0		
21<= total output power <22	±2.0		
20<= total output power < 21	±2.5		
19<= total output power <20	±3.0		
18<= total output power <19	±3.5		
17<= total output power <18	±4.0		
16<= total output power <17	±4.0		
15<= total output power <16	±4.0		
14<= total output power <15	±4.0		
13<= total output power <14	±4.0 (power class 4) ±6.0 (power class 3)		
12<= total output power <13	±4.0 (power class 4) ±6.0 (power class 3)		
11<= total output power <12	±4.0 (power class 4) ±6.0 (power class 3)		
-50<= total output power <11	±6.0		
Note 1: UPH reporting accuracy is the difference between the UPH reported by the UE and the actual uplink power headroom			
Note 2 : No tolerance is specified.			

Table 8.7.9.1: UPH reporting accuracy

8.7.9.3 Test purpose

The purpose of this test case is to verify that the UE transmission power headroom measurement report accuracy is within the specified limits defined in section 9.1.13.4 of 25.133 [2] shown in table 8.7.9.1.

8.7.9.4 Method of test

8.7.9.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

- 1) Connect the SS (node B emulator) to the UE antenna connector as shown in figure A.1.
- 2) The beta factors for E-DPCCH & HS-DPCCH, Reference E-TFCI index, and E-DCH configurations are set as in table 8.7.9.2.

Parameter	Unit	Value	Comment
DL DCH configuration		DL Reference Measurement Channel	As specified in Annex C.3.1 of the
		12.2 kbps	present document
DL configuration		DL Fixed Reference Channel (FRC	As specified in Annex C.8.1.1 of the
		H-Set 1, QPSK version)	present document
E-DCH TTI	ms	10	
E-DCH configuration		10 ms TTI E-DCH Transport Block	
		Size Table 0 according to TS 25.321	
		[13] annex B.3.	
DL Power Control		Off	
Active cell		Cell 1	
βc		8	As specified in 34.108 section 9.2.1
			RADIO BEARER SETUP message:
			AM or UM (Test Loop Mode1)
βd		15	As specified in 34.108 section 9.2.1
			RADIO BEARER SETUP message:
			AM or UM (Test Loop Mode1)
β ec/βc		5/15	
βed_ref/βc		5/15	
Ahs		5/15	$\Delta ACK = \Delta NACK = \Delta CQI$
Referenœ E-TFCI index		0 as per Table 0 according to TS	
		25.321 [13] annex B.3.	

			· · ·			
Table 8.7.9.2: 0	General test	parameters for	UE transm	nission	power	headroom

3) The power levels and cell specific parameters are set as in table 8.7.9.3.

Table 8.7.9.3: Cell Specific parameters for UE transmission power headroom

Parameter	Unit	Cell 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DPCH_Ec/lor	dB	-10	
HS-SCCH_Ec/lor	dB	-8	
HS-PDSCH_Ec/lor	dB	-3	
E-AGCH_Ec/lor	dB	DTX'd	
E-HICH_Ec/lor	dB	DTX'd	
E-RGCH_Ec/lor	dB	DTX'd	
OCNS	dB	Note 1	
Î _{or}	dBm/3.84 MH z	-70	
NOTE 1: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I _{or.}			

- 4) The UE is switched on.
- 5) An E-DCH call is set up according to TS 34.108 [3] 7.3.9 with the following exceptions in the RADIO BEARER SETUP message. These exceptions are derived from Table 8.7.9.2, and in addition allow the beta values to be set and each UL physical channel to be at constant power during the measurement.

Information Element	Value/Remark
Uplink DPCH info	
- Power Control Algorithm	Algorithm 2
- Δ _{ACK}	0, giving $A_{hs} = 5/15$
- Δ _{NACK}	0, giving $A_{hs} = 5/15$
 Ack-Nack repetition factor 	3 (required for continuous HS-DPCCH signal)
E-DCH info	Uplink DPCH info
- E-DPCCH info	
- E-DPCCH/DPCCH power offset	0, giving $A_{ec} = 5/15$
- E-DPDCH info	
- Reference E-TFCIs	1 E-TFCI
- Reference E-TFCI	0
- Reference E-TFCI PO	0, giving $A_{ed_ref} = 5/15$
- Scheduling Information Configuration	
 Periodicity for Scheduling Info – no grant 	10 ms
Downlink HS-PDSCH Information	
- Measurement Feedback Info	
- CQI Feedback cycle, k	4 ms
- CQI repetition factor	2 (required for continuous HS-DPCCH signal)
- Δ _{CQI}	0, giving $A_{hs} = 5/15$

Table 8.7.9.4: Contents of RADIO BEARER SETUP message: AM or UM (E-DCH and HSDPA)

8.7.9.4.2 Test procedure

- 1) The Scheduling Information configuration for the E-DCH indicates to the UE that it shall periodically report Scheduling Information, which contains UPH measurement every E-DCH TTI. During the test the system simulator shall not send any scheduling grant to the UE, and therefore the UE will not send any payload data on the E-DCH.
- 2) The SS shall set the UE DPCCH power to be between -11.1 dBm and -8 dBm for a power class 3 UE, or between -14.1 dBm and -11dBm for a power class 4 UE by using uplink power control.
- 3) The SS measures both the power transmitted by the UE on DPCCH and the total output power of the UE every time slot. The SS averages both the DPCCH output power and total output power of the UE over 100 ms.
- 4) The SS estimates the UE transmission power headroom as the difference between the maximum allowed uplink transmit power (P_{max}) and the average DPCCH power measured in step 3.
- 5) The SS notes the UE transmission power headroom value reported in the Scheduling Information.
- 6) The SS calculates the difference between the UE transmission power headroom value estimated in step 4 and the reported UE transmission power headroom noted in step 5. The SS notes this as the UE transmission power headroom accuracy, and compares it to the applicable limit according to the total output power measured in step 3.
- 7) If the UE transmission power headroom accuracy exceeds the value in Table 8.7.9.5 count a bad result, otherwise a good result with respect to the actually set TX power (DTX on E-DPDCH is not considered a bad result).
- 8) Repeat steps 3 to 7 in order to collect more good or bad results for the currently set power level. Continue the repetition, until statistical significance according to Annex F.6.2.8 is achieved.
- 9) The SS sends 5 up TPC commands at the frame boundary to bring the Tx power of the UE up by a nominal 1 dB step, then alternate UP/DOWN to maintain constant Tx power.
- 10) Repeat steps 3 through 9 and note the UE transmission power headroom accuracy for each UE total power value until the UE stops reporting UPH or does not give lower UPH values for 8 consecutive repetitions of steps 3 through 9. If the lowest reported UPH is UE_POWER_HEADROOM_13 or higher for a power class 3 UE, or UE_POWER_HEADROOM_14 or higher for a power class 4 UE, then count a bad result (DTX on E-DPDCH is not considered a bad result).

8.7.9.5 Test requirements

The UE transmission power headroom measurement report accuracy recorded in steps 6, 9 and 10 above shall meet the requirements in table 8.7.9.5. The rate of correct measurements observed during repeated tests shall be at least 90%. To pass the test, the UE transmission power headroom accuracy for each power level in the reporting range must pass. Once a power level is passed, no more results need be collected on this power level.

Total UE output power value (dBm)	UPH reporting accuracy(dB) (note 1)	
25<= total output power <34	note 2	
24<= total output power <25	±2.8	
23<= total output power <24	±2.8	
22<= total output power <23	±2.8	
21<= total output power <22	±2.8	
20<= total output power < 21	±3.3	
19<= total output power <20	±3.8	
18<= total output power <19	±4.3	
17<= total output power <18	±4.8	
16<= total output power <17	±4.8	
15<= total output power <16	±4.8	
14<= total output power <15	±4.8	
13<- total output power <14	±4.8 (power class 4)	
	±6.8 (power class 3)	
12<- total output power <13	±4.8 (power class 4)	
	±6.8 (power class 3)	
11<= total output power <12	±4.8 (power class 4)	
	±6.8 (power class 3)	
-50<= total output power <11	±6.8	
NOTE 1: UPH reporting accuracy is the diffe	rence between the UPH reported by	
the UE and the actual uplink power	headroom	
NOTE 2: No tolerance is specified.		

Table 8.7.9.5: Test re	quirement for UPH	reporting accuracy
------------------------	-------------------	--------------------

NOTE1: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.10 E-UTRAN FDD RSRP absolute accuracy

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.10.1 Definition and applicability

The absolute accuracy of RSRP is defined as the RSRP measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN FDD RSRP absolute accuracy measurement is used for handover between UTRAN FDD and E-UTRAN FDD.

The requirements and this test apply to the combined UTRAN FDD and E-UTRAN FDD UE for Rel.9 and later.

8.7.10.2 Minimum Requirements

The accuracy requirements for E-UTRA RSRP measurements in CELL_DCH state shall be the same as the interfrequency RSRP accuracy requirements in 3GPP TS36.133[34], as follows:

Cell specific reference signals are transmitted either from one, two or four antenna ports.

Conditions defined in TS 36.101 [37] clause 7.3 for reference sensitivity are fulfilled.

RSRP|dBm according to TS 36.133 [34] Annex B.3.3 for a corresponding Band

Parameter	Unit	Accura	cy [dB]		Conditions			
		Normal	Extreme	Bands 1, 4, 6,	Bands 2, 5, 7,	Band 25	Bands 3, 8, 12,	Band 9, 42, 43
		condition	condition	10, 11, 18, 19,	41, 26		13, 14, 17, 20,	
				21, 23, 24, 33,			22	
				34, 35, 36, 37,				
				38, 39, 40				
				lo	lo	lo	lo	lo
RSRP for Ës/lot ≥	dBm	±6	±9	-	-	-	-	-
-6 dB				121dBm/15kHz	119dBm/15kHz	117.5dBm/15k	118dBm/15kHz	120dBm/15kHz
				70dBm/	70dBm/	Hz70dBm/	70dBm/	70dBm/
				BWChannel	BW _{Channel}	BW Channel	BW Channel	BW _{Channel}
RSRP for Ês/lot ≥	dBm	±8	±11	-70dBm/	-70dBm/	-70dBm/	-70dBm/	-70dBm/
-6 dB				BW _{Channel}				
				50dBm/	50dBm/	50dBm/	50dBm/	50dBm/
				BWChannel	BWChannel	BW _{Channel}	BW Channel	BW _{Channel}
N	OTF 1	lo is assumed	to have const	ant EPRE across	the handwidth			

Table 8.7.10.2.1: E-UTRAN FDD RSRP absolute accuracy

The normative reference for this requirement is TS 25.133 [2] clause 9.1.4a and A.9.1.10

8.7.10.3 Test purpose

The purpose of this test is to verify that the E-UTRAN FDD RSRP measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform E-UTRAN FDD measurements, is within the specified limits. This measurement is for UTRAN FDD to E-UTRAN FDD handover evaluation.

8.7.10.4 Method of test

8.7.10.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table K.2 in Annex K.

In the test in Cell_DCH state compressed mode with purpose "E-UTRAN FDD RSRP Measurement" is applied to measure on E-UTRAN FDD. The compressed mode pattern repeats every 80 ms and uses a gap length of 10 slots. Further details are found in TS 25.101 annex A.5.

Tables 8.7.10.4.1.1 and 8.7.10.4.1.2 define the limits of signal strengths and code powers on the UTRA FDD cell where requirements are applicable. In the measurement control information periodic reporting of E-UTRAN FDD RSRP is indicated to the UE. The E-UTRAN FDD test parameters are given in Table 8.7.10.4.1.3.

Table 8.7.10.4.1.1: General test parameters for E-UTRAN FDD RSRP absolute accuracy tests

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in TS 25.101 section A.3.1
		12.2 kbps	
Power Control		On	
Target quality value on	BLER	0.01	
DTCH			
Active cell		Cell 1	UTRA FDD cell
Neighbour cell		Cell 2	E-UTRA FDD cell
CP length of cell 2		nomal	
Filter coefficient		0	L3 filtering is not used
Compressed mode		Compressed mode reference pattern 2	As specified in table A.22 TS 25.101
patterns		Set 5	section A.5
- E-UTRÁN measurement			
Inter-RAT measurement		E-UTRAN FDD RSRP	
quantity			
Monitored cell list size		1 E-UTRAN FDD neighbour cell	Measurement control information is sent
			before the compressed mode pattern
			starts.

Table 8.7.10.4.1.2: UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRP absolute accuracy tests

Parameter	Unit	Cell 1		
UTRA RF Channel number	-	Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	dB	Note 2		
lor/loc	dB	-1		
loc	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13.54		
Propagation condition	-	AWGN		
NOTE 1: The DPCH level is controlled by the power control loop				
NOTE 2: The power of the OCNS channel that is added shall make the				
total power from the cell to be equal to lor.				

Parameter		Unit	Test 1	Test 2	
BW _{channel}		MHz	10	10	
Measurement bandwidth		n _{PRB}	22—27	22—27	
PDCCH/PCFICH/PHICH Reference measurement channel as defined in TS			R.6 FDD	R.6 FDD	
36.133 A.3.1.2.1 OCNG Pattern a	as defined in TS 36.133				
A.3.2.1.2			OP.2 FDD	OP.2 FDD	
PBCH RA					
PBCH RB					
PSS_RA					
SSS_RA					
PCFICH_RB					
PHICH_RA					
PHICH_RB		dB	0	0	
PDCCH_RA					
PDCCH_RB					
PDSCH_RA					
PDSCH_RB					
OCNG_RA ^{Note1}					
OCNG_RB ^{Note1}					
	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24			-117	
$N_{\scriptscriptstyle oc}$ Note2	Bands 2, 5, 7and 26 (Note 5)	dBm/15 kHz	-88.65	-115	
	Band 25			-113.5	
	Bands 3, 8, 12, 13, 14, 20 and 22			-114	
Band 9				-116	
\hat{E}_{s}/I_{ot}		dB	10	-4	
	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24			-121	
RSRP ^{Note3}	Bands 2, 5, 7, and 26 (Note 5)	dBm/15 kHz	-78.65	-119	
	Band 25			-117.5	
	Bands 3, 8, 12, 13,			-118	
	14, 20 and 22			110	
	Band 9			-120	
	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24.			-87.76	
lo ^{Note3}	Bands 2, 5, 7 and 26 (Note 5)	dBm/9 MHz	-50.45	-85.76	
	Band 25			-84.26	
	Bands 3, 8, 12, 13, 14, 20 and 22			-84.76	
Band 9				-86.76	
\hat{E}_{s}/N_{oc}		dB	10	-4	
Propagation condition		-	AWGN	AWGN	
NOTE 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted pow er spectral density is achieved for all OFDM symbols.					
NOTE 2: Interference from other cells and noise sources not specified in the test is assumed to be constant					
over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{oc} to be					
turilled. NOTE 3: RSRP and to levels have been derived from other parameters for information purposes. They are					
NOTE 4: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port					

Table 8.7.10.4.1.3: E-UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRP absolute accuracy tests

receiver antenna port. NOTE 5: For Band 26, the tests shall be performed with the assigned E-UTRA channel bandwidth within 865-894

8.7.10.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.10.5.2 and table 8.7.10.5.3.
- 2) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message (compressed gaps). Otherwise, Go to Step4.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (compressed gaps).
- 4) SS shall transmit MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the E-UTRAN FDD RSRP is requested to the UE.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check E-UTRAN FDD RSRP value of Cell 2 in MEASUREMENT REPORT messages. E-UTRAN FDD RSRP power of Cell 2 reported by UE is compared to actual E-UTRAN FDD RSRP value of Cell 2 for each MEASUREMENT REPORT message.
- 7) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Tables G.2.3-1 in TS36.521-3 [38] is achieved.
- 8) The RF parameters are set up according to table 8.7. 10.5.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional [1s] and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 9) The SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of TS 34.108 [3] and clause 4.4 and 4.7B.1 of TS 36.508 [33], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter-RAT measurement (step 2):

Derivation Path: TS 36.508 [33], clause 4.7B.1 Table 4	4.7B.1-5: PHYSICAL CHANNE	L RECONFIGURAT	ION
Information Element	Value/remark	Comment	Condition
Message Type			1
RRC transaction identifier			
	0		
Downlink information common for all radio links	0		
Downlink information common for all radio links - Downlink DPCH info common for all RL	0 Not Present		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info	0 Not Present		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI	0 Not Present		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag	0 Not Present 1 Activate		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN	0 Not Present 1 Activate (Current CFN + (256 –		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 1		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 1		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters - TGMP	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 1 F-UTRA measurement		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGCFN - Transmission gap pattern sequence configuration parameters - TGPRC	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 1 E-UTRA measurement Infinity		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - Transmission gap pattern sequence configuration parameters - TGPRC - TGSN	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 1 E-UTRA measurement Infinity 10		
Downlink information common for all radio links - Downlink DPCH info common for all RL - DPCH compressed mode info - TGPSI - TGPS Status Flag - TGCFN - TGMP - TGPRC - TGSN - TGI 1	0 Not Present 1 Activate (Current CFN + (256 – TTI/10msec))mod 256 1 E-UTRA measurement Infinity 10 10		

- TGL2	Not Present		
- TGD	0		
- TGPL1	8		
- TGPL2	Not Present		
- RPP	mode 0		
- ITP	mode 0		
- CHOICE UL/DL Mode	UL and DL		
 Downlink compressed mode method 	SF/2		
 Uplink compressed mode method 	SF/2		
- Downlink frame type	В		
- DeltaSIR1	3.0		
- DeltaSIRAfter1	3.0		
- DeltaSIR2	Not Present		
- DeltaSIRAfter2	Not Present		
- N identify abort	Not Present		
- T Reconfirm abort	Not Present		
- TX Diversity mode	Not Present		
- SSDT information	Not Present		
- Default DPCH Offset Value	Not Present		
Downlink information for each radio link	Not Present		
MBMS PL Service Restriction Information	Not Present		

MEASUREMENT CONTROL message for Inter-RAT measurement (step 4):

Derivation Path: 15 36.508 [33], clause 4.7B.1 Table	e 4.7B.1-3: MEASUREMENT C		
Information Element	Value/remark	Comment	Condition
Message Type			
RRC transaction identifier	0		
ivieasurement Identity	2		
Measurement Reporting Mode			
- Periodical Reporting/Event Trigger Reporting	Periodical reporting		
CHOICE Measurement type	Inter-RAI measurement		

- CHOICE Inter-RAT measurement objects	E-UTRA frequency list	
- New frequencies		
- E-UTR A carrier frequency	Downlink EARFCN of E-	
	UTRACell	
- Measurement bandwidth	6	
 Inter-RAT reporting quantity 		
- CHOICE system	E-UTRA	
- Reporting quantity	Measurement quantity	
- CHOICE report criteria	Periodical reporting	
	criteria	
- Reporting amount	Infinity	
- Reporting interval	500 ms	
- Reporting cell status		
- CHOICE reported cell	Report cells within active	
	set or within virtual active	
	set or of the other RAT	
 Maximum number of reported cells 	1	
DPCH Compressed mode status info	Notpresent	

MEASUREMENT REPORT message for inter-RAT test cases

Derivation Path: TS 36.508 [33], clause 4.7B.1 Table 4.7B.1-4: MEASUREMENT REPORT			
Information Element	Value/remark	Comment	Condition
Message Type			
Measurement identity	2		
E-UTRA Measured Results			
- E-UTRA measured results list	1 entry		
- E-UTRA Carrier Frequency	Checked that this IE is		
	present		
- Measured E-UTRA cells	1 entry		
- Physical Cell Identity	Checked that this IE is	PhysicalCellIdentity	
	present	of Cell 2	
- RSRP	Checked that this IE is		
	present		
- RSRQ	This IE does not need to		
	be checked		
E-UTRA Event Results	Notpresent		

8.7.10.5 Test requirements

Table 8.7.10.5.2 and table 8.7.10.5.3 defines the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.10.5.4 in each test shall be more than 90% with a confidence level of 95%.

Table 8.7.10.5.1: Void

Table 8.7.10.5.2: UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRP absolute accuracy tests

Parameter	Unit	Cell 1
UTRA RF Channel number	-	Channel 1
CPICH_Ec/lor	dB	-10
PCCPCH_Ec/lor	dB	-12
SCH_Ec/lor	dB	-12
PICH_Ec/lor	dB	-15
DCH_Ec/lor	dB	Note 1
OCNS_Ec/lor	dB	Note 2
Îor/loc	dB	-1
loc	dBm/3.84 MHz	-70
CPICH_Ec/lo	dB	-13.54
Propagation condition	-	AWGN
NOTE 1:The DPCH level is controlled by the power control loopNOTE 2:The power of the OCNS channel that is added shall make the
total power from the cell to be equal to lor.

Table 8.7.10.5.3: E-UTRAN FDD cell specific test parameters
for E-UTRAN FDD RSRP absolute accuracy tests

Par	ameter	Unit	Test 1	Test 2
BW _{channel}		MHz	10	10
Measurement bandwidth		n_{PRB}	22—27	22—27
PDCCH/PCFICH/PHICH Reference				
m easurement cl	nannel as defined in		R.6 FDD	R.6 FDD
TS 36.133 A.3.1.2.1				
OCNG Pattern as defined in TS				
36.133 A.3.2.1.	2		01.2100	01.2100
PBCH_RA				
PBCH_RB				
PSS_RA				
SSS_RA				
PCFICH_RB				
			0	0
		aв	0	0
PDSCH RB				
OCNG RANOTET				
OCNG RB ^{NOTET}				
	Bands 1, 4, 6, 10,			
	11, 18, 19, 21, 23			-117.00
	and 24			
	Bands 2, 5, 7 and			115.00
N_{ac}^{Note2}	26 (Note 5)	dBm/15 kHz	88.05	-115.00
00	Band 25		-00.50	-113.50
	Bands 3, 8, 12,			
	13, 14, 17, 20 and			-114.00
	22 Dand 0			110.00
<u> </u>	Band 9			-116.00
E_s/I_{ot}		dB	10.00	-3.20
	Bands 1, 4, 6, 10,			
	11, 18, 19, 21, 23		-78.95	-120.20
	and 24			
	Bands 2, 5, 7 and			-118.20
RSRP ^{Note3}	26 (NOTE 5) Band 25	dBm/15 kHz		116 70
	Bande 2 9 12			-110.70
	13 14 17 20 and			-117 20
	22			117.20
	Band 9			-119.20
	Bands 1, 4, 6, 10,			
	11, 18, 19, 21, 23			-87.52
	and 24			
	Bands 2, 5, 7 and			-85 52
Io ^{Note3}	26 (Note 5)	dBm/9 MHz	-50 75	-00.02
10	Band 25		00.70	-84.02
	Bands 3, 8, 12,			04.50
	13, 14, 17, 20 and			-84.52
	∠∠ Band 9			-86 52
/ \ \	Dana 3			-00.02
E_s/N_{oc}		dB	10.00	-3.20
Propagation cor	ndition	-	AWGN	AWGN
NOTE 1: OCNG	shall be used such th	hat both cells are	fully allocated and a d	constant total
transmit	transmitted power spectral density is achieved for all OFDM symbols.			

Parameter	Unit	Test 1	Test 2
NOTE 2: Interference from other cells be constant over subcarriers	s and noise sourœ and time and shal	es not specified in the I be modelled as AWC	e test is assumed to GN of appropriate
power for $N_{_{oc}}$ to be fulfilled.			
NOTE 3: RSRP and lo levels have be purposes. They are not settab	een derived from one of the parameters the	other parameters for in emselves.	nformation
NOTE 4: RSRP minimum requiremer noise at each receiver antenr	nts are specified a na port.	ssuming independent	t interference and
NOTE 5: For Band 26, the tests sha bandwidth within 865-894	II be performed w	ith the assigned E-U1	TRA channel

Table 8.7.10.5.4: E-UTRAN FDD RSRP absolute accuracy requirements for the reported values

	Test 1			Test 2		
	All bands	Bands 1, 4, 6, 10, 11 18, 19, 21, 23, 24	Bands 2, 5, 7, 26	Band 25	Bands 3, 8, 12, 13, 14, 17, 20, 22	Band 9
		Normal Condi	tions			
Lowest reported value (Cell 2)	RSRP_52	RSRP_13	RSRP_15	RSRP_17	RSRP_16	RSRP_14
Highest reported value (Cell 2)	RSRP_71	RSRP_28	RSRP_30	RSRP_31	RSRP_31	RSRP_29
Extreme Conditions						
Lowest reported value (Cell 2)	RSRP_49	RSRP_10	RSRP_12	RSRP_14	RSRP_13	RSRP_11
Highest reported value (Cell 2)	RSRP_74	RSRP_31	RSRP_33	RSRP_34	RSRP_34	RSRP_32

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11 E-UTRAN TDD RSRP absolute accuracy

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.11.1 Definition and applicability

The absolute accuracy of RSRP is defined as the RSRP measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN TDD RSRP absolute accuracy measurement is used for handover between UTRAN FDD and E-UTRAN TDD.

The requirements and this test apply to the combined UTRAN FDD and E-UTRAN TDD UE Release 9 and later.

8.7.11.2 Minimum Requirements

The accuracy requirements for E-UTRA RSRP measurements in CELL_DCH state shall be the same as the interfrequency RSRP accuracy requirements in 3GPP TS36.133[34], as follows:

- Cell specific reference signals are transmitted either from one, two or four antenna ports.
- Conditions defined in 36.101 Section 7.3 for reference sensitivity are fulfilled.
- RSRP|dBm according to 36.133 Annex B.3.3 for a corresponding Band

Table 8.7.11.2.1: E-UTRAN TDD RSRP absolute accuracy

Parameter	Unit	Accuracy [dB]	Conditions	

		Normal condition	Extreme condition	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23, 24, 33, 34, 35, 36, 37, 38, 39, 40	Bands 2, 5, 7, 41	Band 25	Bands 3, 8, 12, 13, 14, 17,20, 22	Band 9, 42, 43
				lo	lo	lo	lo	lo
RSRP for Ës/lot ≥	dBm	±6	±9	-	-	-	-	-
-6 dB				121dBm/15kHz	119dBm/15kHz	117.5dBm/15k	118dBm/15kHz	120dBm/15kHz
				70dBm/	70dBm/	Hz70dBm/	70dBm/	70dBm/
				BWChannel	BWChannel	BW Channel	BW Chan nel	BW Chan nel
RSRP for Ês/lot ≥	dBm	±8	±11	-70dBm/	-70dBm/	-70dBm/	-70dBm/	-70dBm/
-6 dB				BW _{Channel}	BW _{Channel}	BWChannel	BWChannel	BWChannel
				50dBm/	50dBm/	50dBm/	50dBm/	50dBm/
				BWChannel	BWChannel	BW Chan nel	BW Chan nel	BW Channel
NOTE 1: lo is as	sumed t	o have consta	nt EPRE acros	ss the bandwidth	_			

The normative reference for this requirement is TS 36.133 [34] clause 9.1.3.1.

8.7.11.3 Test purpose

The purpose of this test is to verify that the E-UTRAN TDD RSRP measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform E-UTRAN TDD measurements, is within the specified limits. This measurement is for UTRAN FDD to E-UTRAN TDD handover evaluation.

8.7.11.4 Method of test

8.7.11.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table K.2 in Annex K.

In the test in Cell_DCH state compressed mode with purpose "E-UTRAN TDD RSRP Measurement" is applied to measure on E-UTRAN TDD. The compressed mode pattern repeats every 80 ms and uses a gap length of 10 slots. Further details are found in table A.22 in annex A.5 of 3GPP TS 25.101.

Tables 8.7.11.4.1.1 and 8.7.11.4.1.2 define the limits of signal strengths and code powers on the UTRA FDD cell where requirements are applicable. In the measurement control information periodic reporting of E-UTRAN TDD RSRP is indicated to the UE. The E-UTRAN TDD test parameters are given in Table 8.7.11.4.1.3.

Table 8.7.11.4.1.1: General test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in 3GPP TS 25.101 section
		12.2 kbps	A.3.1
Power Control		On	
Target quality value on	BLER	0.01	
DTCH			
Active cell		Cell 1	UTRA FDD cell
Neighbour cell		Cell 2	E-UTRA TDD cell
CP length of cell 2		nomal	
Filter coefficient		0	L3 filtering is not used
Compressed mode		Compressed mode reference pattern 2	As specified in table A.22 3GPP TS
patterns		Set 5	25.101 section A.5
- E-UTRAN measurement			
Inter-RAT measurement		E-UTRAN TDD RSRP	
quantity			
Monitored cell list size		1 E-UTRAN TDD neighbour cell	Measurement control information is sent
			before the compressed mode pattern
			starts.

Table 8.7.11.4.1.2: UTRAN FDD cell specific test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Parameter	Unit	Cell 1

UTRA RF Channel number	-	Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	dB	Note 2		
lor/loc	dB	-1		
loc	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13.54		
Propagation condition	-	AWGN		
NOTE 1: The DPCH level is controlled by the power control loop				
NOTE 2: The power of the OCNS channel that is added shall make the				
total power from the cell	to be equal to lor.			

Table 8.7.11.4.1.3: E-UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Pa	rameter	Unit	Test 1	Test 2
E-UTRARFCh	annel Number		1	1
BW _{channel}		MHz	10	10
Special subfrar	ne configuration Noter		6	6
Uplink-downlin	k configuration Note		1	1
Measurement	pandwidth	n _{PRB}	22—27	22—27
PDCCH/PCFIC measurement of TS 36.133 A.3.	CH/PHICH Reference channel as defined in 1.2.2		R.6 TDD	R.6 TDD
OCNG Pattern 36.133 A.3.2.2.	as defined in TS 2		OP.2 TDD	OP.2 TDD
PBCH_RA				
PBCH_RB				
PSS_RA				
SSS_RA				
PCFICH_RB				
PHICH_RA				
PHICH_RB		dB	0	0
PDCCH_RA				
PDCCH_RB				
PDSCH_RA				
PDSCH_RB				
OCNG_RA				
OCNG_RB				
N7 Note3	Bands 33 ~ 40		-88.65	-117.00
N _{oc}	Bands 42 and 43	dBm/15 kHz		-116.00
.	Band 41			-115.00
\hat{E}_s/I_{ot}		dB	10	-4
	Bands 33 ~ 40			-121.00
	Bands 42 and 43	dBm/15 kHz	-78.65	-120.00
	Band 41			-119.00
	Bands 33 ~ 40			-87.76
lo ^{Note4}	Bands 42 and 43	dBm/9 MHz	-50.45	-86.76
	Band 41			-85.76
\hat{E}_s/N_{oc}		dB	10.0	-4.0
Propagation condition		-	AWGN	AWGN
 NOTE 1: For special subframe and uplink-downlink configurations see Tables 4.2-1 and 4.2-2 in 3GPP TS 36.211. NOTE 2: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols. NOTE 3: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of 				
appropriate power for N to be fulfilled.				

NOTE 4: RSRP and lo levels have been derived from other parameters for information

purposes. They are not settable parameters themselves. NOTE 5: RSRP minimum requirements are specified assuming independent interference and noise at each receiver antenna port.

8.7.11.4.2 Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to table 8.7.11.5.2 and table 8.7.11. 5.3.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the E-UTRAN TDD RSRP is requested to the UE.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check E-UTRAN TDD RSRP value of Cell 2 in MEASUREMENT REPORT messages. E-UTRAN TDD RSRP power of Cell 2 reported by UE is compared to actual E-UTRAN TDD RSRP value of Cell 2 for each MEASUREMENT REPORT message.
- 7) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Tables G.2.3-1 in TS36.521-3 [38] is achieved.
- 8) The RF parameters are set up according to table 8.7.11.5.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional [1s] and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 9) The SS shall transmit RRC CONNECTION RELEASE message.
- 10) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of 34.108 [3] and clause 4.4 and 4.7B.1 of TS 36.508 [33], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter-RAT measurement (step 2):

Information Element	Value/Remark	Version
Message Type (10.2.22)		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this message and writes to this IE. The first/	
	leftmost bit of the bit string contains the most significant bit of the MAC-I.	
-RRC message sequenœ number	SS provides the value of this IE, from its internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info (10.3.6.36)	Not Present	

Information Element	Value/Remark	Version
Uplink radio resources		
-Maximum allowed UL TX power	33 dBm	
-CHOICE channel requirement	Not Present	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	P00 and Pol-1 only
Downlink FDSGITIIIOIIIation	NotFleSellt	R99 and Rei-4 Unity
(10.3.0.24)		
-DOWNINK DPCH INTO COMMON FOR All RL	Not Present	
	FDD	
-DPCH compressed mode into (10.3.6.33)		
- Transmission gap pattern sequence	1	
- TGPSI	1	
- TGPS Status Flag	activate	
- TGCFN	(Current CFN + (256 – TTI/10msec))mod	
	256	
- Transmission gap pattern sequence		
configuration parameters		
-TGMP	E-UTRA measurement	REL-8
-TGPRC	NA	
-TGSN	10	
-TGL1	10	
-TGL2	Not Present	
-TGD	0	
-TGPI 1	8	
-TGPL2	Not Present	R99 and Rel-4 only
-RPP	mode 0	
_ITP	mode 0	
Downlink compress of mode method		
-Downlink complessed mode method		
-opinik compressed mode method	D	
	0.0	
	3.U Net Dresent	
	Not Present	
	Not Present	
-N Identify abort	Not Present	
- I Reconfirm abort	Not Present	
- I X Diversity mode (10.3.6.86)	None	
-SSD1 information (10.3.6.77)	Not Present	R99 and Rel-4 only
-Default DPCH Offset Value (10.3.6.16)	Not Present	
-Downlink information per radio link list	1	
-Downlink information for each radio link		
(10.3.6.27)		
-CHOICE mode	FDD	
-Primary CPICH info (10.3.6.60)		
-Primary scrambling code	100	
-PDSCH with SHO DCH info (10.3.6.47)	Not Present	R99 and Rel-4 only
-PDSCH code mapping (10.3.6.43)	Not Present	R99 and Rel-4 only
-Downlink DPCH info for each RL (10.3.6.21)		-
-CHOICE mode	FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used	
-DPCH frame offset	Set to value Default DPCH Offset Value (as	
	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No change	
-TPC combination index		
	V Not Present	R00 and Rol 4 only
Closed loop timing editerment mode	Not Drogont	1.33 and r.e4 Uniy
- Closed loop unling adjustmentmode	Not Present	
-3000000000000000000000000000000000000		1

1027

MEASUREMENT CONTROL message for Inter-RAT measurement (step 4):

Wessage Type (10:2.17) Intermitting Intermitting 0 -Integrity check info	Information Element/Group name	Value/Remark	Version
UE information elements 0 Integrity check info 0 Integrity check info SS calculates the value of MAC-I for this message authentication code insignificant bit of the bits tring contains the most significant bit of the MAC-1. -RRC message sequence number SS provides the value of this IE, from its internal counter. Measurement Information elements Measurement Lennity Measurement Reporting Mode (10.3.7.46) Setup -Measurement Reporting Mode (10.3.7.49) AM RLC -Measurement Report Transfer Mode AM RLC -Measurement Negon Transfer Mode AM RLC -Periodical Reporting Mode (10.3.7.20) Inter-RAT measurement (10.3.7.20) -CHOICE Heasurement type Inter-RAT measurement -Inter-RAT cell ind inst (10.3.7.20) Inter-RAT cells -New inter-RAT cells 1 -Inter-RAT requency ist (10.3.7.6b) Inter-RAT measurement -We frequencies Integer(0.65535), according to TS 36.508 -VETRA frequency ist (10.3.7.6b) Inter-RAT measurement quantity (10.3.7.29) -Measurement guantity (10.3.7.20)<	Message Type (10.2.17)		
FRC transaction identifier 0 Integrity check info SS calculates the value of MAC-1 for this message and writes to this IE. The first/ leftmost bit of the bits tring contains the most significant bit of the MAC-1. -RRC message sequence number SS provides the value of this IE. The first/ leftmost bit of the bits tring contains the most significant bit of the MAC-1. -RRC message sequence number SS provides the value of this IE. The first/ leftmost bit of the bits tring contains the most significant bit of the MAC-1. -Measurement Information elements	UE information elements		
Integrity check info Integrity check info Immessage authentication code SS calculates the value of MAC-I for this message and writes to this IE. The first / leftmost bit of the bits tring contains the most significant bit of the MAC-I. Immessage sequence number SS provides the value of this IE, from its internal counter. Measurement Information elements	-RRC transaction identifier	0	
Imessage authentication code SS calculates the value of MAC-1 for this message and writes to this IE. The first leftmost bit of the bit string contains the most significant bit of the MAC-1. IRRC message sequence number SS provides the value of this IE. The first leftmost bit of the bit string contains the most significant bit of the MAC-1. Measurement Information elements Internal counter. Measurement Command (10.3.7.49) AMRLC Measurement Command (10.3.7.49) Periodical reporting Measurement Reporting Mode (10.3.7.1) Not Present Additional measurements list (10.3.7.1) Not Present CHOICE Measurement type Inter-RAT measurement Inter-RAT cell ind list (10.3.7.23) Inter-RAT cells -CHOICE Inter-RAT cell removal Remove no inter-RAT cells -New inter-RAT cell ind list (10.3.7.69) 9 -CHOICE F-UTR A frequency list (10.3.7.69) Inter-RAT cells -We wrequencies Inter-RAT measurement -New inter-RAT cell ind 9 -CHOICE F-UTR A frequency list (10.3.7.69) Inter-RAT measurement -Weasurement ganative (10.3.7.29) -Measurement ganative (10.3.7.29) -Measurement ganative (10.3.7.32) Inter-RAT measurement quantive (10.3.7.32) -Mea	-Integrity check info		
message and writes to this IE. The first/ leftmost bit of the bit string contains the most significant bit of the MAC-1. -RRC message sequence number SS provides the value of this IE, from its internal counter. Weasurement Information elements	-message authentication code	SS calculates the value of MAC-I for this	
ieffmost bit of the bit string contains the most significant bit of the MAC-1. -RRC message sequence number SS provides the value of this IE, from its internal counter. Measurement Information elements Image: Comparison of the comparison of th		message and writes to this IE. The first/	
most significant bit of the MAC-1. -RRC message sequence number SS provides the value of this IE, from its intermal counter. Measurement Information elements		leftmost bit of the bit string contains the	
-RRC message sequence number SS provides the value of this IE, from its internal counter. Measurement Information elements		most significant bit of the MAC-I.	
Internal counter, Measurement Information elements Measurement Identity 2 Measurement Command (10.3.7.46) Setup Measurement Reporting Mode (10.3.7.49)	-RRC message sequence number	SS provides the value of this IF, from its	
Measurement Information elements Measurement Command (10.3.7.46) Setup -Measurement Command (10.3.7.46) Setup -Measurement Command (10.3.7.47) Measurement Command (10.3.7.47) -Measurement Reporting / Event Trigger Reporting Periodical reporting / Event Trigger Reporting Mode Measurements list (10.3.7.1) Not Present -Additional measurements list (10.3.7.27) Inter-RAT cell info list (10.3.7.23) Inter-RAT cell info list (10.3.7.23) Inter-RAT cell info list (10.3.7.23) Mexinter-RAT cells New inter-RAT cells 1 Inter-RAT cell info list (10.3.7.6b) 9 CHOICE E-UTRA A frequency removal Remove no frequencies E-UTRA requencies 1		internal counter.	
Measurement Identity 2 Measurement Reporting Mode (10.3.7.46) Setup Measurement Reporting Mode (10.3.7.49)	Measurement Information elements		
Measurement Command (10.3.7.46) Setup Measurement Reporting Mode (10.3.7.49)	-Measurement Identity	2	
Measurement Reporting Mode (10.3.7.49) AM RLC -Measurement Report Transfer Mode AM RLC -Periodical Reporting / Event Trigger Reporting Periodical reporting Mode Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement (10.3.7.27) Inter-RAT measurement (10.3.7.23) - -Inter-RAT cell info list (10.3.7.23) Inter-RAT cells - -CHOICE Inter-RAT cell removal Remove no inter-RAT cells - -New inter-RAT cells 1 - - -Inter-RAT cell info list (10.3.7.25) - - - -CHOICE Inter-RAT cells 1 - - - -New inter-RAT cell info 9 - - - - -CHOICE Radio Access Technology -	-Measurement Command (10.3.7.46)	Setup	
- Measurement Report Transfer Mode AM RLC - Periodical Reporting / Event Trigger Reporting Periodical reporting Additional measurements list (10.3.7.1) Not Present CHOICE Measurement (10.3.7.27) Inter-RAT measurement (10.3.7.23) -Inter-RAT cell info list (10.3.7.23) Inter-RAT cells -CHOICE Inter-RAT cell removal Remove no inter-RAT cells -New inter-RAT cell coll removal 9 -CHOICE Radio Access Technology	-Measurement Reporting Mode (10.3.7.49)		
-Periodical Reporting / Event Trigger Reporting Mode Periodical reporting -Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement type Inter-RAT measurement -Inter-RAT cell info list (10.3.7.27) - -Inter-RAT cell info list (10.3.7.23) - -CHOICE Inter-RAT cell removal Remove no inter-RAT cells -New inter-RAT cell info list (10.3.7.23) - -CHOICE Radio Access Technology - -Cell for measurement 1 E-UTR A frequency list (10.3.7.6b) - E-UTR A frequency list (10.3.7.29) - -New frequencies - -We frequencies - -Inter-RAT meas urement quantity (10.3.7.29) - -Inter-RAT meas urement quantity for UTRAN quality Section 4.3.1.2 -Measurement quantity for UTRAN quality Not Present estimate (10.3.7.38) - -Inter-RAT reporting quantity REL-8 -Inter-RAT reporting quantity FALSE -CHOICE system	-Measurement Report Transfer Mode	AMRLC	
Mode Additional measurements list (10.3.7.1) Not Present -Additional measurement type Inter-RAT measurement -Inter-RAT measurement type Inter-RAT measurement -Inter-RAT cell info list (10.3.7.23)	-Periodical Reporting / Event Trigger Reporting	Periodical reporting	
-Additional measurements list (10.3.7.1) Not Present -CHOICE Measurement type Inter-RAT measurement -Inter-RAT cell info list (10.3.7.27) - -Inter-RAT cell info list (10.3.7.23) - -CHOICE Inter-RAT cell if (10.3.7.23) - -New inter-RAT cells 1 -Inter-RAT cell id 9 -CHOICE Teadio Access Technology - -CHOICE Furtherement 1 E-UTRA frequency list (10.3.7.6b)	Mode		
CHOICE Measurement type Inter-RAT measurement -Inter-RAT cell info list (10.3.7.23) - -Inter-RAT cell info list (10.3.7.23) - -CHOICE Inter-RAT cells 1 -Inter-RAT cells 1 -Inter-RAT cell info list (10.3.7.23) - -CHOICE Radio Access Technology - -CHOICE Radio Access Technology - -CHOICE Radio Access Technology - -CE-UTRA frequency list (10.3.7.6b) CHOICE E-UTRA Arguency list (10.3.7.6b) CHOICE E-UTRA Arguency moval Remove no frequencies -New frequencies CHOICE E-UTRA Arguency moval -New frequencies CHOICE E-UTRA Arguency moval -Neasurement guantity (10.3.7.29) CHOICE system -Measurement quantity for UTRAN quality Not Present estimate (10.3.7.38) E-UTRA -CHOICE system E-UTRA -Filter coefficient 0 -Inter-RAT reporting quantity (10.3.7.32) -UTRAN estimated quality FALSE -CHOICE system E-UTRA -Inter-RAT reporting quantity (10.3.7.31)	-Additional measurements list (10.3.7.1)	Not Present	
-Inter-RAT measurement (10.3.7.27) -Inter-RAT cell info list (10.3.7.23) -CHOICE Inter-RAT cells -New inter-RAT cells 1 -Inter-RAT cell id 9 -CHOICE Radio Access Technology -Cell for measurement 1 E-UTRA frequency list (10.3.7.6b) CHOICE E-UTR A frequency removal -New frequencies -E-UTRA carrier frequency Integer(0.65535), according to TS 36.508 section 4.3.1.2 -Measurement Bandwidth 50 -Inter-RAT measurement quantity (for UTRAN quality estimate (10.3.7.38) -CHOICE system -Filter coefficient -Inter-RAT reporting quantity (10.3.7.32) -UTRAN estimated quality -Inter-RAT reporting quantity (10.3.7.32) -UTRAN estimated quality -FaLSE -Filter coefficient -Inter-RAT reporting quantity (10.3.7.32) -UTRAN estimated quality -Reporting cell status (10.3.7.61) -CHOICE system -Reporting cell status (10.3.7.61) -CHOICE reported cell Report cells with	-CHOICE Measurement type	Inter-RAT measurement	
-Inter-RAT cell info list (10.3.7.23) Remove no inter-RAT cells -New inter-RAT cells 1 -Inter-RAT cells 1 -Inter-RAT cell id 9 -CHOICE Radio Access Technology 1 et-UTRA frequency list (10.3.7.6b) 1 E-UTRA frequency list (10.3.7.6b) 1 et-UTRA frequency list (10.3.7.29) Integer(0.65535), according to TS 36.508 -Keurement Bandwidth 50 -Inter-RAT measurement quantity for UTRAN quality Not Present estimate (10.3.7.38) E-UTRA -CHOICE system E-UTRA -Inter-RAT reporting quantity (10.3.7.29) -Inter-RAT measurement quantity (10.3.7.32) -Inter-RAT neporting quantity (10.3.7.32) 0 -Inter-RAT reporting quantity (10.3.7.32) -Inter-RAT measurement quantity -Inter-RAT reporting quantity (10.3.7.32) -Inter-RAT measurement quantity -Inter-RAT reporting quantity FALSE -CHOICE system E-UTRA -REL-8 -Inter-RAT reporting quantity -CHOICE system E-UTRA -Inter-RAT reporting cell status (10.3.7.51) -Inter-RAT reporting cell status (10.3.7.51) -CHOICE reported cell Report	-Inter-RAT measurement (10.3.7.27)		
-CHOICE Inter-RAT cell removal Remove no inter-RAT cells -New inter-RAT cells 1 -Inter-RAT cell id 9 -CHOICE Radio Access Technology - -Cell for measurement 1 E-UTRA frequency list (10.3.7.6b) CHOICE E-UTRA frequency removal Remove no frequencies -New frequencies -Heasurement Bandwidth 50 -Inter-RAT measurement quantity (10.3.7.29) -Measurement quantity for UTRAN quality section 4.3.1.2 -CHOICE system E-UTRA -Filter coefficient 0 -Inter-RAT reporting quantity (10.3.7.32) -Inter-RAT reporting quantity FALSE -Filter coefficient 0 -Inter-RAT reporting quantity FALSE -UTR AN estimated quality FALSE -CHOICE system E-UTRA -REL-8	-Inter-RAT cell info list (10.3.7.23)		
-New inter-RAT cells 1 -Inter-RAT cell id 9 -CHOICE Radio Access Technology -Cell for measurement -Cell for measurement 1 E-UTRA frequency list (10.3.7.6b) -New frequencies -New frequencies -Remove no frequencies -New frequencies -Inter-RAT measurement quantity (10.3.7.29)	-CHOICE Inter-RAT cell removal	Remove no inter-RAT cells	
-Inter-RAT cell id 9 -CHOICE Radio Access Technology 1 E-UTRA frequency list (10.3.7.6b) 1 CHOICE E-UTR A frequency removal Remove no frequencies -New frequencies 1 -E-UTRA carrier frequency Integer(065535), according to TS 36.508 section 4.3.1.2 -Measurement Bandwidth 50 -Inter-RAT measurement quantity (10.3.7.29) - -Measurement quantity for UTRAN quality Not Present estimate (10.3.7.38) E-UTRA -CHOICE system E-UTRA -Inter-RAT reporting quantity (10.3.7.32) - -Inter-RAT reporting quantity (10.3.7.32) - -UTRAN estimated quality FALSE -CHOICE system E-UTRA -CHOICE reporting quantity measurement quantity -CHOICE report cell Report cells within active set or within virtual active set or of the other RAT -Maximum number of reported cells <td>-New inter-RAT cells</td> <td>1</td> <td></td>	-New inter-RAT cells	1	
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Physical channel information elements	-Reporting interval	500 ms	
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FDFGF COMDIESSED MODE STATUS IND (10.3.0.34) INOL PIESENT	-DPCH compressed mode status info (10.3.6.34)	Not Present	

MEASUREMENT REPORT message for inter-RAT test cases

This message is common for all inter-RAT test cases in clause 8.7 and is described in Annex I.

8.7.11.5 Test requirements

Table 8.7.11.5.2 and table 8.7.11.5.3 define the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.10.5.4 in each test shall be more than 90% with a confidence level of 95%.

Table 8.7.11.5.1: Void

Table 8.7.11.5.2: UTRAN FDD cell specific test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Parameter	Unit	Cell 1		
UTRA RF Channel number	-	Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	dB	Note 2		
Îor/loc	dB	-1		
loc	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13.54		
Propagation condition - AWGN				
 NOTE 1: The DPCH level is controlled by the power control loop NOTE 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor. 				

Table 8.7.11.5.3: E-UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRP absolute accuracy tests

Pa	rameter	Unit	Test 1	Test 2
E-UTRARF Ch	annel Number		1	1
BW _{channel}		MHz	10	10
Special subfran	ne configuration Noter		6	6
Uplink-downlinl	k configuration Note		1	1
Measurementb	bandwidth	n_{PRB}	22—27	22—27
PDCCH/PCFIC	H/PHICH Reference			
measuremento	channel as defined in		R.6 TDD	R.6 TDD
TS 36.133 A.3.	1.2.2			
OCNG Pattern	as defined in TS			
36.133 A.3.2.2.	2			01.2 100
PBCH_RA				
PBCH_RB				
PSS_RA				
SSS_RA				
PCFICH_RB				
PHICH_RA				
PHICH_RB	PHICH_RB		0	0
PDCCH_RA				
PDCCH_RB				
PDSCH_RA				
PDSCH_RB				
OCNG_RA				
OCNG_RB ^{NOTE2}				
	Bands 33 ~ 40			-117.00
N_{oc}^{Note3}	Bands 42 and 43	dBm/15 kHz	-88.95	-116.00
	Band 41			-115.00
\hat{E}_s/I_{ot}		dB	10.00	-3.20
	Bands 33 ~ 40.			-120.20
RSRP ^{Note4}	Bands 42 and 43	dBm/15 kHz	-78.95	-119.20
	Band 41			-118.20
	Bands 33 ~ 40			-87.52
Io ^{Note4} Bands 42 and 43		dBm/9 MHz	-50.75	-86.52
Band 41				-85.52
\hat{E}_{s}/N_{oc}		dB	10.00	-3.20
Propagation co	ndition	-	AWGN	AWGN

NOTE 1: For special subframe and uplink-downlink configurations see Tables 4.2-1 ar	nd 4.2-2
in 3GPP TS 36.211	
NOTE 2: OCNG shall be used such that both cells are fully allocated and a constant to	otal
transmitted power spectral density is achieved for all OPDM symbols.	
NOTE 3: Interference from other cells and noise sources not specified in the test is as	sumed
to be constant over subcarriers and time and shall be modelled as AWGN of	
appropriate power for N_{oc} to be fulfilled.	
NOTE 4: RSRP and lo levels have been derived from other parameters for information	۱
purposes. They are not settable parameters themselves.	
NOTE 5: RSRP minimum requirements are specified assuming independent interferer	ice and
noise at each receiver antenna port.	

Table 8.7.11.5.4: E-UTRAN TDD RSRP absolute accuracy requirements for the reported values

	Test 1		Test 2		
	All bands	Bands 33 ~ 40	Bands 42 and 43	Band 41	
Normal Conditions					
Lowest reported value (Cell 2)	RSRP_52	RSRP_13	RSRP_14	RSRP_15	
Highest reported value (Cell 2)	RSRP_71	RSRP_28	RSRP_29	RSRP_30	
Extreme Conditions					
Lowest reported value (Cell 2)	RSRP_49	RSRP_10	RSRP_11	RSRP_12	
Highest reported value (Cell 2)	RSRP_74	RSRP_31	RSRP_32	RSRP_33	

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.12 E-UTRAN FDD RSRQ absolute accuracy

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.12.1 Definition and applicability

The absolute accuracy of RSRQ is defined as the RSRQ measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN FDD RSRQ absolute accuracy measurement is used for handover between UTRAN FDD and E-UTRAN FDD.

The requirements and this test apply to the combined UTRAN FDD and E-UTRAN FDD UE for Rel.9 and later.

8.7.12.2 Minimum Requirements

The accuracy requirements for E-UTRA RSRQ measurements in CELL_DCH state shall be the same as the interfrequency RSRQ accuracy requirements in 3GPP TS 36.133[34], as follows:

- Cell specific reference signals are transmitted either from one, two or four antenna ports.
- Conditions defined in TS 36.101 [37] clause 7.3 for reference sensitivity are fulfilled.
- RSRP|dBm according to TS 36.133 Annex B.3.3 [34] for a corresponding Band.

Parameter	Unit	Accura	cy [dB]		Conditions			
		Normal	Extreme	Bands 1, 4, 6,	Bands 2, 5, 7,	Band 25	Bands 3, 8, 12,	Bands 9, 42,
		condition	condition	10, 11, 18, 19,	41, 26		13, 14, 17, 20,	43
				21, 23, 24, 33,			22	
				34, 35, 36, 37,				
				38, 39, 40				
				lo	lo	lo	lo	lo
RSRQ	dBm	± 2.5	± 4	-	-	-	-	-
when				121dBm/15kHz	119dBm/15kHz	117.5dBm/15k	118dBm/15kHz	120dBm/15kHz
RSRP				50dBm/	50dBm/	Hz50dBm/	50dBm/	50dBm/
Ês/lot > -3				BW Channel				
dB								
RSRQ	dBm	± 3.5	± 4	-	-	-	-	-
when				121dBm/15kHz	119dBm/15kHz	117.5dBm/15k	118dBm/15kHz	120dBm/15kHz
RSRP				50dBm/	50dBm/	Hz50dBm/	50dBm/	50dBm/
Ês/lot ≥ -6				BW Channel				
dB								
NOTE: lo	o is ass	umed to hav	e constant E	PRE across the	bandwidth.			

Table 8.7.12.2.1: E-UTRAN FDD RSRQ absolute accuracy

The normative reference for this requirement is TS 25.133 [2] clause 9.1.4b and A.9.1.12.

8.7.12.3 Test purpose

The purpose of this test is to verify that the E-UTRAN FDD RSRQ measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform E-UTRAN FDD measurements, is within the specified limits. This measurement is for UTRAN FDD to E-UTRAN FDD handover evaluation.

8.7.12.4 Method of test

8.7.12.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table K.2 in Annex K

In the test in Cell_DCH state compressed mode with purpose "E-UTRAN FDD RSRQ Measurement" is applied to measure on E-UTRAN FDD. The compressed mode pattern repeats every 80 ms and uses a gap length of 10 slots. Further details are found in TS 25.101 annex A.5.

Tables 8.7.12.4.1.1 and 8.7.12.4.1.2 define the limits of signal strengths and code powers on the UTRA FDD cell where the UTRA Carrier RSSI absolute accuracy requirements are applicable. In the measurement control information periodic reporting of E-UTRAN FDD RSRQ is indicated to the UE. The E-UTRAN FDD test parameters are given in Table 8.7.12.4.1.3.

Table 8.7.12.4.1.1: General test	parameters for E-UTRAN FDI	D RSRQ absolute accurac	y test s
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Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	UTRA FDD cell
Neighbour cell		Cell 2	E-UTRA FDD cell
CP length of cell 2		nomal	
Filter coefficient		0	L3 filtering is not used
Compressed mode		Compressed mode reference pattern 2	As specified in table A.22 TS 25.101
patterns		Set 5	section A.5
- E-UTRAN measurement			
Inter-RAT measurement quantity		E-UTRAN FDD RSRQ	
Monitored cell list size		1 E-UTRAN FDD neighbour cell	Measurement control information is sent before the compressed mode pattern starts.

Parameter	Unit	Cell 1		
UTRA RF Channel number	-	Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	dB	Note 2		
Îor/loc	dB	-1		
loc	dBm/3.84 MHz	-70		
CPICH_Ec/lo	dB	-13.54		
Propagation condition - AWGN				
NOTE 1: The DPCH level is controlled by the power control loop NOTE 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to lor.				

Table 8.7.12.4.1.2: UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRQ absolute accuracy tests

Table 8.7.12.4.1.3: E-UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRQ absolute accuracy tests

Parameter	Unit	Test 1	Test 2	Test 3	
BW _{channel}	MHz	10	10	10	
Measurement bandwidth	n _{PRB}	22—27	22—27	22—27	
PDCCH/PCFICH/PHICH Reference measurement channel as defined in TS 36.133[34] A.3.1.2.1		R.6 FDD	R.6 FDD	R.6 FDD	
OCNG Pattern as defined in TS 36.133[34] A.3.2.1.2		OP.2 FDD	OP.2 FDD	OP.2 FDD	
PBCH_RA					
PBCH_RB					
PSS_RA					
SSS_RA					
PCFICH_RB					
PHICH_RA					
PHICH_RB	dB	0	0	0	
PDCCH_RA	_				
PDCCH_RB	_				
PDSCH_RA	_				
	-				
	_				
Bands 1 4 6 10 11					
18, 19, 21, 23 and 24.		dBm/15 kHz -80	-104.70	-119.50	
Bands 2, 5, 7 and 26 N_{ac}^{Note2} (Note 5)	dDm /15 kHz			-117.50	
Band 25				-116.00	
Bands 3, 8, 12, 13, 14, 17, 20 and 22				-116.50	
Band 9				-118.50	
\hat{E}_s/I_{ot}	dB	-1.75	-4.0	-4.0	
Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24				-123.50	
Bands 2, 5, 7 and 26 (Note 5)				100.70	-121.50
Band 25		-01.10-	-108.70	-120	
Bands 3, 8, 12, 13, 14, 17, 2 and 0 22				-120.50	
Band 9	1			-122.50	

	Parameter	Unit	Test 1	Test 2	Test 3
	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24	-			
	Bands 2, 5, 7 and 26				
RSRQ ^{Note3}	(Note 5)	dB	-1/ 76	-16.25	-16.25
	Band 25	üD	-14.70	-10.20	-10.20
	Bands 3, 8, 12, 13, 14, 17, 20 and 22	-			
	Band 9				
	Bands 1, 4, 6, 10, 11,	-	dBm/9 MHz -50	-75.46	-90.26
	18, 19, 21, 23 and 24				-30.20
	Bands 2, 5, 7and 26				-88.26
Io ^{Note3}	(Note 5)	dBm/9 MHz			00.20
	Band 25				-86.76
	Bands 3, 8, 12, 13,				-87 26
	14, 17, 20 and 22				07.20
	Band 9				-89.26
\hat{E}_{s}/N_{oc}		dB	-1.75	-4.0	-4.0
Propagation condition		-	AWGN	AWGN	AWGN

NOTE 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.

NOTE 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over

subcarriers and time and shall be modelled as AWGN of appropriate power for $\,N_{oc}\,$ to be fulfilled.

NOTE 3: RSRQ, RSRP and lo levels have been derived from other parameters for information purposes. They are not settable parameters themselves.

NOTE 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.

NOTE 5: For Band 26, the tests shall be performed with the assigned E-UTRA channel bandwidth within 865-894

8.7.12.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to tables 8.7.12.5.2 and 8.7.12. 5.3.
- 2) If compressed mode is required, SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message (compressed gaps). Otherwise, Go to Step4.
- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message (compressed gaps).
- 4) SS shall transmit MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the E-UTRAN FDD RSRQ is requested to the UE.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.
- 6) SS shall check E-UTRAN FDD RSRQ value of Cell 2 in MEASUREMENT REPORT messages. The E-UTRAN FDD RSRQ value of Cell 2 reported by UE is compared to actual E-UTRAN FDD RSRQ value of Cell 2 for each MEASUREMENT REPORT message.
- 7) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Tables G.2.3-1 in TS36.521-3 [38] is achieved.
- 8) The RF parameters are set up according to table 8.7.12. 5.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional [1s] and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 9) The RF parameters are set up according to table 8.7.12. 5.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional [1s] and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.

10) The SS shall transmit RRC CONNECTION RELEASE message.

11) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of TS 34.108 [3] and clause 4.4 and 4.7B.1 of TS 36.508 [33], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter-RAT measurement (step 2):

Derivation Path: TS 36.508 [33], clause 4.7B.1 Table 4.7B.1-5: PHYSICAL CHANNEL RECONFIGURATION				
Information Element	Value/remark	Comment	Condition	
Message Type				
RRC transaction identifier	0			
Downlink information common for all radio links				
- Downlink DPCH info common for all RL	Not Present			
- DPCH compressed mode info				
- TGPSI	1			
- TGPS Status Flag	Activate			
- TGCFN	(Current CFN + (256 –			
	TTI/10msec))mod 256			
- Transmission gap pattern sequence	1			
configuration parameters				
- TGMP	E-UTRA measurement			
- TGPRC	Infinity			
- TGSN	10			
- TGL1	10			
- TGL2	Not Present			
- TGD	0			
- TGPL1	8			
- TGPL2	Not Present			
- RPP	mode 0			
- ITP	mode 0			
- CHOICE UL/DL Mode	UL and DL			
 Downlink compressed mode method 	SF/2			
- Uplink compressed mode method	SF/2			
- Downlink frame type	В			
- DeltaSIR1	3.0			
- DeltaSIRAfter1	3.0			
- DeltaSIR2	Not Present			
- DeltaSIRAfter2	Not Present			
- N identify abort	Not Present			
- T Reconfirm abort	Not Present			
- TX Diversity mode	Not Present			
- SSDT information	Not Present			
- Default DPCH Offset Value	Not Present			
Downlink information for each radio link	Not Present			
MBMS PL Service Restriction Information	Not Present			

MEASUREMENT CONTROL message for Inter-RAT measurement (step 4):

Derivation Path: TS 36.508 [33], clause 4.7B.1 Table 4.7B.1-3: MEASUREMENT CONTROL						
Information Element	Value/remark	Comment	Condition			
Message Type						
RRC transaction identifier	0					
Measurement Identity	2					
Measurement Reporting Mode						
- Periodical Reporting/Event Trigger Reporting	Periodical reporting					
Mode						
CHOICE Measurement type	Inter-RAT measurement					
- CHOICE Inter-RAT measurement objects	E-UTRA frequency list					
- New frequencies						
- E-UTRA carrier frequency	Downlink EARFCN of E- UTRA Cell					
- Measurement bandwidth	6					
- Inter-RAT measurement quantity						
- CHOICE system	E-UTRA					
- Measurement quantity	RSRQ					

 Inter-RAT reporting quantity 	
- CHOICE system	E-UTRA
- Reporting quantity	Measurement quantity
- CHOICE report criteria	Periodical reporting criteria
- Reporting amount	Infinity
- Reporting interval	500 ms
- Reporting cell status	
- CHOICE reported cell	Report cells within active
	set or within virtual active
	set or of the other RAT
 Maximum number of reported cells 	1
DPCH Compressed mode status info	Not present

MEASUREMENT REPORT message for inter-RAT test cases

Derivation Path: TS 36.508 [33], clause 4.7B.1 Table 4.7B.1-4: MEASUREMENT REPORT						
Information Element	Value/remark	Comment	Condition			
Message Type						
Measurement identity	2					
E-UTRA Measured Results						
- E-UTRA measured results list	1 entry					
- E-UTRA Carrier Frequency	Checked that this IE is					
	present					
- Measured E-UTRA cells	1 entry					
- Physical Cell Identity	Checked that this IE is	PhysicalCellIdentity				
	present	of Cell 2				
- RSRP	This IE does not need to					
	be checked					
- RSRQ	Checked that this IE is					
	present					
E-UTRA Event Results	Notpresent					

8.7.12.5 Test requirements

Table 8.7.12.5.2 and table 8.7.12.5.3 define the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.12.5.4 in each test shall be more than 90% with a confidence level of 95%.

Table 8.7.12.5.1: Void

able 8.7.12.5.2: UTRAN FDD cell specific test parameters
for E-UTRAN FDD RSRQ absolute accuracy tests

Parameter	Unit	Cell 1		
UTRA RF Channel number	-	Channel 1		
CPICH_Ec/lor	dB	-10		
PCCPCH_Ec/lor	dB	-12		
SCH_Ec/lor	dB	-12		
PICH_Ec/lor	dB	-15		
DCH_Ec/lor	dB	Note 1		
OCNS_Ec/lor	DCNS_Ec/lor dB Note 2			
Îor/loc	dB -1			
loc	dBm/ 3.84 MHz -70			
CPICH_Ec/lo	dB	-13.54		
Propagation condition	- AWGN			
NOTE 1: The DPCH level is controlled by the power control loop				
NOTE 2: The power of the OCNS channel that is added shall make the				
total power from the cell to be equal to lor.				

Table 8.7.12.5.3: E-UTRAN FDD cell specific test parameters for E-UTRAN FDD RSRQ absolute accuracy tests

Parameter		Unit	Test 1	Test 2	Test 3
BWchannel		MHz	10	10	10
Measurement bandwidth		n _{PRB}	22—27	22—27	22—27
PDCCH/PCFIC	H/PHICH Reference				
measuremento	hannel as defined in		R.6 FDD	R.6 FDD	R.6 FDD
TS 36.133 A.3.	1.2.1				
OCNG Pattern	as defined in TS		OP.2 FDD	OP.2 FDD	OP.2 FDD
DRCH RA	2				
PBCH_RB					
PSS RA					
SSS_RA		-			
PCFICH_RB					
PHICH_RA					
PHICH_RB		dB	0	0	0
PDCCH_RA		_			
		-			
PDSCH RB		-			
OCNG RANOTET		-			
OCNG_RB ^{NOLET}					
	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24				-119.50
T Note 2	Bands 2, 5, 7 and 26	dBm/15 kHz	-80.80	-104.70	-117 50
N _{oc} ^{Nole2}	(Note 5)				110.00
	Band 25				-116.00
	14, 17, 20 and 22				-116.50
Band 9					-118.50
E_s/I_{ot}		dB	-1.75	-3.20	-3.20
	Bands 1, 4, 6, 10, 11, 18, 19, 21, 23 and 24			-107.90	-122.70
	Bands 2, 5, 7 and 26				-120 70
RSRP ^{Note3}	(Note 5)	dBm/15 kHz	-82.55		140.00
	Band 25 Banda 2 8 12 12	-			-119.20
	14, 17, 20 and 22	-			-119.70
	Band 9 Banda 1 4 6 10 11				-121.70
	18, 19, 21, 23 and 24				
	Bands 2. 5 and 7. and				
DCDONote3	26 (Note 5)	dD	14.76	45.00	15 60
RORQ	Band 25	uв	-14.70	-15.09	-15.69
	Bands 3, 8, 12, 13,				
	14, 17, 20 and 22	-			
	Band 9 Bands 1 4 6 10 11				
	18, 19, 21, 23 and 24				-90.02
	Bands 2, 5, 7 and 26				-88.02
lo ^{Note3}	Band 25	dBm/9 MHz	-50.80	-75.22	-86.52
	Bands 3, 8, 12, 13,				07.00
	14, 17, 20 and 22				-87.02
	Band 9				-89.02
\hat{E}_{s}/N_{oc}		dB	-1.75-3.20	-3.20	
Propagation co	ndition	-	AWGN	AWGN	AWGN

NOTE 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.

NOTE 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over subcarriers and time and shall be modelled as AWGN of appropriate power for N_{ac} to be fulfilled.

NOTE 3: RSRQ, RSRP and lo levels have been derived from other parameters for information purposes. They are not settable parameters themselves.

NOTE 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.

NOTE 5: For Band 26, the tests shall be performed with the assigned E-UTRA channel bandwidth within 865-894

Table 8.7.12.5.4: E-UTRAN FDD RSRQ absolute accuracy requirements for the reported values

	Test 1	Test 2			Test 3		
			Bands 1,	Bands 2		Bands 3,	
	All bands	All bands All bands	11 18, 19,	5, 7, 26	Band 25	14, 17, 20,	Band 9
[21, 23, 24] 22]							
		noimai	Conditions				
Lowest reported value (Cell 2)	RSRQ_04	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00
Highest reported value (Cell 2)	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16
Extreme Conditions							
Lowest reported value (Cell 2)	RSRQ_01	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00
Highest reported value (Cell 2)	RSRQ_19	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.13 E-UTRAN TDD RSRQ absolute accuracy

Editor's note: This Test case is incomplete for frequencies above 3GHz

- The Test system uncertainties applicable above 3GHz are undefined
- The Test Tolerances and Test Requirements applicable above 3GHz are undefined

8.7.13.1 Definition and applicability

The absolute accuracy of RSRQ is defined as the RSRQ measured from a cell that has different carrier frequency from the serving cell.

The E-UTRAN TDD RSRQ absolute accuracy measurement is used for handover between UTRAN FDD and E-UTRAN TDD.

The requirements and this test apply to the combined UTRAN FDD and E-UTRAN TDD UE for Rel.9 and later.

8.7.13.2 Minimum Requirements

The accuracy requirements for E-UTRA RSRQ measurements in CELL_DCH state shall be the same as the interfrequency RSRQ accuracy requirements in 3GPP TS 36.133[34], as follows:

- Cell specific reference signals are transmitted either from one, two or four antenna ports.
- Conditions defined in TS 36.101 [2] clause 7.3 for reference sensitivity are fulfilled.
- RSRP|dBm according to 36.133 Annex B.3.3 for a corresponding Band.

Parameter	Unit	Accura	cy [dB]			Condi	tions'	
		Normal	Extreme	Bands 1, 4, 6,	Bands 2, 5, 7,	Band 25	Bands 3, 8, 12,	Bands 9, 42,
		condition	condition	10, 11, 18, 19,	41		13, 14, 17, 20,	43
				21, 23, 24, 33,			22	
				34, 35, 36, 37,				
				38, 39, 40				
				lo	lo	lo	lo	lo
RSRQ	dBm	± 2.5	± 4	-	-	-	-	-
when				121dBm/15kHz	119dBm/15kHz	117.5dBm/15k	118dBm/15kHz	120dBm/15kHz
RSRP				50dBm/	50dBm/	Hz50dBm/	50dBm/	50dBm/
Ês/lot > -3				BW Channel				
dB								
RSRQ	dBm	± 3.5	± 4	-	-	-	-	-
when				121dBm/15kHz	119dBm/15kHz	117.5dBm/15k	118dBm/15kHz	120dBm/15kHz
RSRP				50dBm/	50dBm/	Hz50dBm/	50dBm/	50dBm/
Ês/lot ≥ -6				BW Channel				
dB								
	No	te: lo is	assumed to	have constant E	PRE across the	bandwidth.		

Table 8.7.13.2.1: E-UTRAN TDD RSRQ absolute accuracy

The normative reference for this requirement is TS 36.133 [34] clause 9.1.3.1.

8.7.13.3 Test purpose

The purpose of this test is to verify that the E-UTRAN TDD RSRQ measurement accuracy in CELL_DCH state, for UE that needs compressed mode to perform E-UTRAN TDD measurements, is within the specified limits. This measurement is for UTRAN FDD to E-UTRAN TDD handover evaluation.

8.7.13.4 Method of test

8.7.13.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: see table K.2 in Annex K.

In the test in Cell_DCH state compressed mode with purpose "E-UTRAN TDD RSRQ Measurement" is applied to measure on E-UTRAN TDD. The compressed mode pattern repeats every 80 ms and uses a gap length of 10 slots. Further details are found in table A.22 in annex A.5 of 3GPP TS 25.101.

Tables 8.7.13.4.1,1 and 8.7.13.4.1,2 define the limits of signal strengths and code powers on the UTRA FDD cell where the UTRA Carrier RSSI absolute accuracy requirements are applicable. In the measurement control information periodic reporting of E-UTRAN TDD RSRQ is indicated to the UE. The E-UTRAN TDD test parameters are given in Table 8.7.13.4.1,3.

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel	As specified in 3GPP TS 25.101 section
		12.2 kbps	A.3.1
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	1.28Mcps UTRA TDD cell
Neighbour cell		Cell 2	E-UTRA TDD cell
CP length of cell 2		Normal	
Uplink-downlink		1	As specified in table 4.2.2 in TS 36.211
configuration of cell 2			[35]
Special subframe		6	As specified in table 4.2.1 in TS 36.211
configuration of cell 2			[35]
Filter coefficient		0	L3 filtering is not used
Compressed mode		Compressed mode reference pattern 2	As specified in table A.22 3GPP TS
patterns		Set 5	25.101 section A.5
- E-UTRAN measurement			
Inter-RAT measurement		E-UTRAN TDD RSRQ	
quantity			
Monitored cell list size		1 E-UTRAN TDD neighbour cell	Measurement control information is sent before the compressed mode pattern starts.

Table 8.7.13.4.1.1: General test parameters for E-UTRAN TDD RSRQ absolute accuracy tests

Table 8.7.13.4.1.2: UTRAN FDD cell specific test parameters for E-UTRAN TDD RSRQ absolute accuracy tests

Parameter	Unit	Cell 1			
UTRA RF Channel number	-	Channel 1			
CPICH_Ec/lor	dB	-10			
PCCPCH_Ec/lor	dB	-12			
SCH_Ec/lor	dB	-12			
PICH_Ec/lor	dB	-15			
DCH_Ec/lor	dB	Note 1			
OCNS_Ec/lor dB Note 2					
Îor/loc	dB -1				
loc dBm/ 3.84 MHz -70					
CPICH_Ec/lo	CPICH_Ec/lo dB -13.54				
ropagation condition - AWGN					
NOTE 1: The DPCH level is controlled by the power control loop					
NOTE 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior.					

Parameter		Unit	Test 1	Test 3			
E-UTRARF Ch	annel Number		2	2	2		
BWchannel		MHz	10	10	10		
Measurement	pandwidth	n _{PRB}	22—27	22—27	22—27		
PDCCH/PCFIC	CH/PHICH Reference						
measurement	channel defined in A.2.2 in		R.6 TDD	R.6 TDD	R.6 TDD		
TS 36.521-3 [3	8]						
OCNG Pattern	s defined in D.2.2 (OP.2		OP.2 TDD	OP.2 TDD	OP.2 TDD		
TDD) in TS 36.	521-3 [38]		01 12 188	01.12.100	01.12.100		
PBCH_RA							
PBCH_RB							
PSS_RA							
SSS_RA							
PCFICH_RB							
PHICH_RA							
PHICH_RB		dB	0	0	0		
PDCCH_RA							
PDCCH_RB							
PDSCH_RA							
PDSCH_RB							
OCNG_RA							
OCNG_RB ^{NOTE1}							
	Bands 33 – 40			-104.70	-119.50		
N_{oc}^{Note2}	Band 42 and 43	dBm/15 kHz	-80		-118.50		
	Band 41				-117.50		
\hat{E}_s / I_{ot}		dB	-1.75	-4.0	-4.0		
	Bands 33 – 40				-123.50		
RSRP ^{Note3}	Band 42 and 43	dBm/15 kHz	-81.75	-108.70	-122.50		
	Band 41				-121.50		
RSRQ	Bands 33 – 43	dB	-14.76	-16.25	-16.25		
	Bands 33 – 40				-90.26		
lo ^{Note3}	Bands 42 and 43	dBm/9 MHz	-50	-75.46	-89.26		
	Bands 41				-88.26		
\hat{E}_s / N_{oc}	·	dB	-1.75	-4.0	-4.0		
Propagation co	ndition	-	AWGN	AWGN	AWGN		
NOTE 1: OCM	NG shall be used such that bo	th cells are fully a	allocated and a	constant total	transmitted		
power spectral density is achieved for all OFDM symbols.							
NOTE 2: Interference from other cells and noise sources not specified in the test is assumed to be							
cons	constant over subcarriers and time and shall be modelled as AWGN of appropriate power						
for N to be fulfilled							
	P PSPO and la lavela have	haan darived free	m other percent	otom for inform	otion		
	NOTE 3: RSRP, RSRQ and to levels have been derived from other parameters for information purposes. They are not settable parameters themselves.						
NOTE 4: RSRP and RSRQ minimum requirements are specified assuming independent interference							

8.7.13.4.2 Test Procedure

- 1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2. The RF parameters for Test 1 are set up according to tables 8.7.13.5.2 and 8.7.13.5.3.
- 2) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

and noise at each receiver antenna port.

- 3) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
- 4) SS shall transmit MEASUREMENT CONTROL message for inter RAT measurement. In the measurement control information periodic reporting of the E-UTRAN TDD RSRQ is requested to the UE.
- 5) UE shall transmit periodically MEASUREMENT REPORT messages.

- 6) SS shall check E-UTRAN TDD RSRQ value of Cell 2 in MEASUREMENT REPORT messages. The E-UTRAN TDD RSRQ value of Cell 2 reported by UE is compared to actual E-UTRAN TDD RSRQ value of Cell 2 for each MEASUREMENT REPORT message.
- 7) SS shall check MEASUREMENT REPORT messages transmitted by UE until statistical significance according to Tables G.2.3-1 in TS36.521-3 [38] is achieved.
- 8) The RF parameters are set up according to table 8.7.13.5.3 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional [1s] and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 9) The RF parameters are set up according to table 8.7.13.5.3 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional [1s] and ignore the MEASUREMENT REPORT messages during this period. Then, step 6) and 7) above are repeated.
- 10) The SS shall transmit RRC CONNECTION RELEASE message.
- 11) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in default message content in clause 9 of TS 34.108 [3] and clause 4.4 and 4.7B.1 of TS 36.508 [33], with the following exceptions:

PHYSICAL CHANNEL RECONFIGURATION message for Inter-RAT measurement (step 2):

Information Element	Value/Remark	Version
Message Type (10.2.22)		
UE Information Elements		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IE. The first/	
	leftmost bit of the bit string contains the	
	mostsignificant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
-Integrity protection mode info	Not Present	
-Ciphering mode info	Not Present	
-Activation time	Not Present	
-New U-RNTI	Not Present	
-New C-RNTI	Not Present	
-RRC State Indicator	CELL_DCH	
-UTRAN DRX cycle length coefficient	Not Present	
CN Information Elements		
-CN Information info	Not Present	
UTRAN mobility information elements		
-URA identity	Not Present	
RB information elements		
-Downlink counter synchronisation info	Not Present	
PhyCH information elements		
-Frequency info (10.3.6.36)	Not Present	
Uplink radio resources		
-Maximum allowed UL TX power	33 dBm	
-CHOICE channel requirement	Not Present	
Downlink radio resources		
-CHOICE mode	FDD	
-Downlink PDSCH information	Not Present	R99 and Rel-4 only
-Downlink information common for all radio links		
(10.3.6.24)		
-Downlink DPCH info common for all RL	Not Present	
(10.3.6.18)		
-CHOICE mode	FDD	
-DPCH compressed mode info (10.3.6.33)		
- Transmission gap pattern sequence	1	
- TGPSI	1	

Information Element	Value/Remark	Version
- TGPS Status Flag	activate	
- TGCFN	(Current CFN + (256 – TTI/10msec))mod	
	256	
- Transmission gap pattern sequence		
configuration parameters		
-TGMP	E-UTRA measurement	REL-8
-TGPRC	NA	
-TGSN	10	
-TGL1	10	
-TGL2	Not Present	
-TGD	0	
-TGPL1	8	
-TGPL2	Not Present	R99 and Rel-4 only
-RPP	mode 0	
-ITP	mode 0	
-CHOICE UL/DL mode	UL and DL	
-Downlink compressed mode method	SF/2	
-Uplink compressed mode method	SF/2	
-Downlink frame type	B	
-DeltaSIR1	3.0	
-DeltaSIRafter1	3.0	
-DeltaSIR2	Not Present	
-DeltaSIRafter2	Not Present	
-N Identify abort	Not Present	
-T Reconfirm abort	Not Present	
-TX Diversity mode (10.3.6.86)	None	
-SSDT information (10.3.6.77)	Not Present	R99 and Rel-4 only
-Default DPCH Offset Value (10.3.6.16)	Not Present	
-Downlink information per radio link list	1	
-Downlink information for each radio link	·	
(10.3.6.27)		
-CHOICE mode	FDD	
-Primary CPICH info (10.3.6.60)		
-Primary scrambling code	100	
-PDSCH with SHO DCH info (10.3.6.47)	Not Present	R99 and Rel-4 only
-PDSCH code mapping (10.3.6.43)	Not Present	R99 and Rel-4 only
-Downlink DPCH info for each RL (10.3.6.21)		
-CHOICE mode	FDD	
-Primary CPICH usage for channel estimation	Primary CPICH may be used	
-DPCH frame offset	Set to value Default DPCH Offset Value (as	
	currently stored in SS) mod 38400	
-Secondary CPICH info	Not Present	
-DL channelisation code		
-Secondary scrambling code	Not Present	
-Spreading factor	128	
-Code number	96	
-Scrambling code change	No change	
-TPC combination index	0	
- SSDT Cell Identity	Not Present	R99 and Rel-4 only
- Closed loop timing adjustment mode	Not Present	
- SCCPCH information for FACH (10.3.6.70)	Not Present	

MEASUREMENT CONTROL message for Inter-RAT measurement (step 4):

Information Element/Group name	Value/Remark	Version
Mossago Type (10.2.17)	Value/Neimark	Version
IVESSAGE Type (10.2.17)		
-RRC transaction identifier	0	
-Integrity check info		
-message authentication code	SS calculates the value of MAC-I for this	
	message and writes to this IE. The first/	
	lettmost bit of the bit string contains the	
	most significant bit of the MAC-I.	
-RRC message sequence number	SS provides the value of this IE, from its	
	internal counter.	
Measurement Information elements		
-Measurement Identity	2	
-Measurement Command (10.3.7.46)	Setup	
-Measurement Reporting Mode (10.3.7.49)		
-Measurement Report Transfer Mode	AMRLC	
-Periodical Reporting / Event Trigger Reporting	Periodical reporting	
Mode		
-Additional measurements list (10.3.7.1)	Not Present	
-CHOICE Measurement type	Inter-RAT measurement	
-Inter-RAT measurement (10.3.7.27)		
-Inter-RAT cell info list(10.3.7.23)		
-CHOICE inter-RAT cell removal	Remove no inter-RAT cells	
-New inter-RAT cells	1	
-inter-RAT cell id	9	
-CHOICE Radio Access Technology		
-Cell for measurement	Not present	
-Inter-RAT cell info indication		
CHOICE Inter PAT manufaction	E LITEA froquency list	
-CHOICE Inter-KAT measurement objects		
-E-UTRA frequency list(10.3.7.6b)		REL-8
-CHOICE E-UTRATrequency removal	Remove no frequencies	
		REL-0
-E-UIRA carrier frequency	Integer(0.65535).EARFCN of the downlink	REL-8
	carrier frequency[64]	
Enumerated (6, 15, 25, 50, 75, 100).	Enumerated (6, 15, 25, 50, 75, 100).	REL-8
ivieas urement bandwidth information common for	iveasurement bandwidth information	
all neighbouring cells on the carrier frequency. It	common for all neighbouring cells on the	
is defined by the parameter Transmission	carrier frequency. It is defined by the	
Bandwidth Configuration, N_{RB} [36.104]. The	Parameter Transmission Bandwidth	
values indicate the number of resource blocks	Configuration, N _{RB} [36.104]. The values	
	Indicate the number of resource blocks over	
IS 6.	which the UE could measure. Default value	
	IS 6.	
-Inter-RAT measurement quantity (10.3.7.29)		
-CHOICE system	E-UTRA	REL-8
- Measurement quantity	RSRQ	REL-8
- Filter coefficient	0	REL-8
-Inter-RAT reporting quantity(10.3.7.32)		
-UTRAN estimated quality	FALSE	
-CHOICE system	E-UTRA	REL-8
-Reporting quantity	measurement quantity	REL-8
-Reporting cell status (10.3.7.61)		
-CHOICE reported cell	Report cells within active set or within virtual	
	active set or of the other RAT	
-Maximum number of reported cells	1	
-CHOICE report criteria	Periodical reporting criteria	
-Periodical reporting criteria (10.3.7.53)		
- Amount of reporting	Infinity	
-Reporting interval	500 ms	
Physical channel information elements		
-DPCH compressed mode status info (10.3.6.34)	Not Present	

MEASUREMENT REPORT message for inter-RAT test cases

This message is common for all inter-RAT test cases in clause 8.7 and is described in Annex I.

8.7.13.5 Test requirements

Table 8.7.13.5.2 and table 8.7.13.5.3 define the primary level settings including test tolerances for all tests.

For the test to pass, the ratio of successful reported values according to table 8.7.13.5.4 in each test shall be more than 90% with a confidence level of 95%.

Table 8.7.13.5.1: Void

Parameter	Unit	Cell 1	
UTRA RF Channel number	-	Channel 1	
CPICH_Ec/lor	dB	-10	
PCCPCH_Ec/lor	dB	-12	
SCH_Ec/lor	dB	-12	
PICH_Ec/lor	dB	-15	
DCH_Ec/lor	dB	Note 1	
OCNS_Ec/lor	dB	Note 2	
Ĩor/loc	dB	-1	
loc	dBm/3.84 MHz	-70	
CPICH_Ec/lo	dB	-13.54	
Propagation condition - AWGN			
NOTE 1: The DPCH level is controlled by the power control loop NOTE 2: The power of the OCNS channel that is added shall make the			
total power from the cell to be equal to lor.			

Table 8.7.13.5.2: UTRAN FDD cell specific test parameters for E-UTRAN TDD RSRQ absolute accuracy tests

Parameter		Unit	Test 1	Test 2	Test 3	
BW _{channel}		MHz	10	10	10	
Measurement bandwidth		n _{PRB}	22—27	22—27	22—27	
PDCCH/PCFI	CH/PHICH Reference					
measurement	channel as defined in	R.6 IDD		R.6 IDD	R.6 IDD	
A.Z.Z IN IS 30	.521-3 [38]					
	521_3 [38]		OP.2 TDD	OP.2 TDD	OP.2 TDD	
PBCH RA	.521-5[50]					
PBCH RB						
PSS RA				0	0	
SSS RA						
PCFICH RB						
PHICH RA						
PHICH RB		dB	0			
PDCCH_RA						
PDCCH_RB						
PDSCH_RA						
PDSCH_RB						
OCNG_RA ^{NOLE}	1					
λ/ Note2	Bands 33-40	dBm/15 kHz	-80.80	-104.70	-119.50	
IV _{oc}	Bands 42 and 43				-118.50	
	Band 41				-117.50	
\hat{E}_{s}/I_{ot}		dB	-1.75	-3.20	-3.20	
	Bands 33- 40	dBm/15 kHz	-82.55	-107.90	-122.70	
RSRP ^{Note3}	Bands 42 and 43				-121.70	
	Band 41				-120.70	
RSRQ ^{Note3}	Bands 33-40	dB	-14.76	-15.69	-15.69	
	Bands 42 and 43					
	Band 41					
lo ^{Note3}	Bands 33-40		-50.80	-75.22	-90.02	
	Bands 42 and 43	_dBm/9 MHz			-89.02	
	Band 41				-88.02	
\hat{E}_s/N_{oc}		dB	-1.75	-3.20	-3.20	
Propagation condition		-	AWGN	AWGN	AWGN	

Table 8.7.13.5.3: E-UTRAN TDD cell specific test parameters for E-UTRAN TDD RSRQ absolute accuracy tests

NOTE 1: OCNG shall be used such that both cells are fully allocated and a constant total transmitted power spectral density is achieved for all OFDM symbols.

NOTE 2: Interference from other cells and noise sources not specified in the test is assumed to be constant over

subcarriers and time and shall be modelled as AWGN of appropriate power for $\,N_{_{oc}}\,$ to be fulfilled.

NOTE 3: RSRQ, RSRP and lo levels have been derived from other parameters for information purposes. They are not settable parameters themselves.

NOTE 4: RSRP and RSRQ minimum requirements are specified assuming independent interference and noise at each receiver antenna port.

Table 8.7.13.5.4: E-UTRAN TDD RSRQ absolute accuracy requirements for the reported values

	Test 1	Test 2	Test 3				
	All bands	All bands	Bands 33 ~ 40	Bands 42, 43	Band 41		
Normal Conditions							
Lowest reported value (Cell 2)	RSRQ_04	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00		
Highest reported value (Cell 2)	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16	RSRQ_16		
Extreme Conditions							
Lowest reported value (Cell 2)	RSRQ_01	RSRQ_00	RSRQ_00	RSRQ_00	RSRQ_00		
Highest reported value (Cell 2)	RSRQ_19	RSRQ_17	RSRQ_17	RSRQ_17	RSRQ_17		

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NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.